

KIC 002437112

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
002437112-01	OBS	3461.01	18.798550	138.019582	501.3	4.906	9.5	11.0	0.71	4808	2.08	15.85
002437112-02	OBS	No	18.798463	147.229359	423.6	3.938	8.1	8.6	0.71	4808	1.60	15.85
002437112-03	OBS	3461.02	3.187401	132.805503	131.4	6.542	7.7	8.4	0.71	4808	0.84	168.93

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002437112-01	OBS	FP	0.00	0	1	1	1	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_RESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
002437112-02	OBS	FP	0.00	1	1	1	1	IS_SEC_TCE—CENT_RESOLVED_OFFSET—EPHEM_MATCH
002437112-03	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_RESOLVED_OFFSET

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002437112-01

TCE (1)	KIC	Parent (2)	Parent KIC	P ₁ :P ₂	Dist ($''$)	Δ Row	Δ Col	m ₂	m ₁	D ₂ /D ₁	Mechanism	Flag	σ_P	σ_T
002437112-01	2437112	3598.01	2437149	1:1	19.7	-5	1	17.63	16.15	1052.50	Direct-PRF	0	0.17	0.19

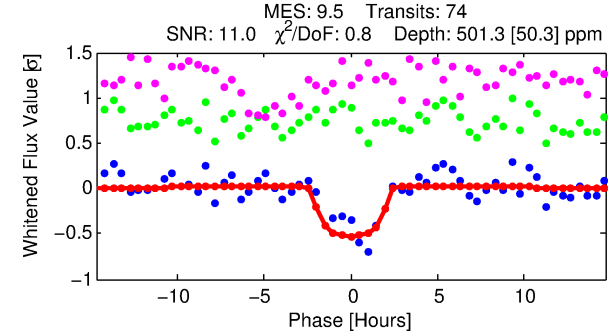
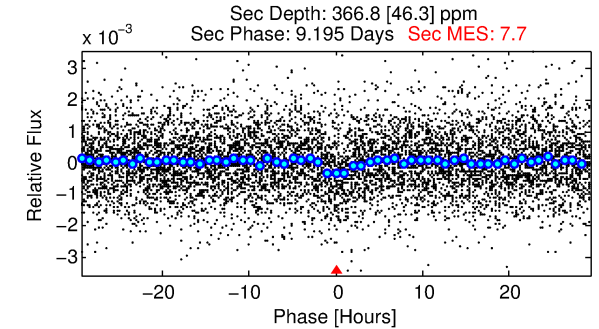
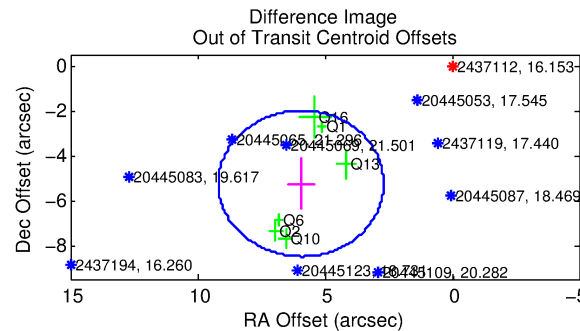
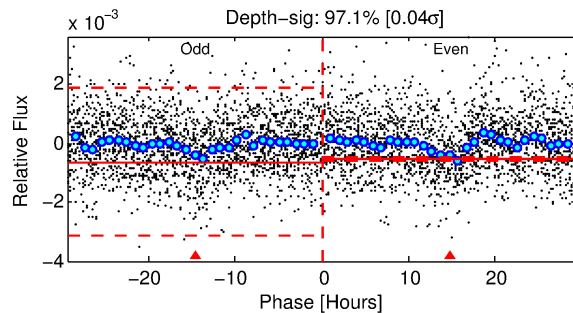
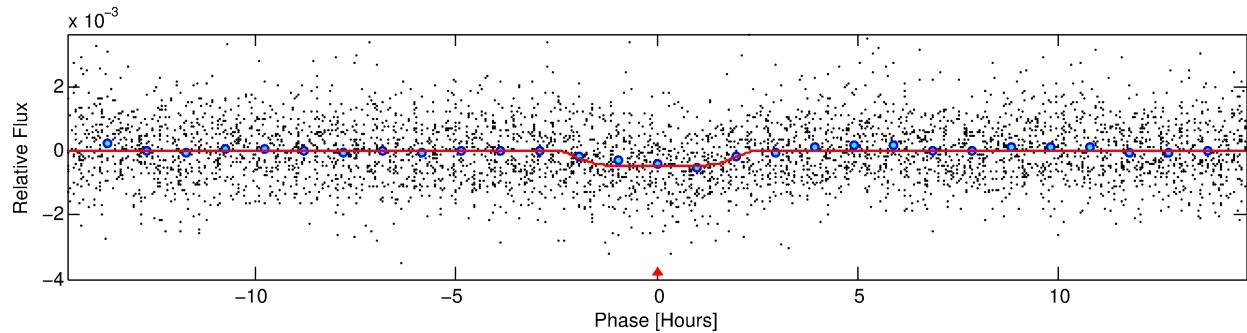
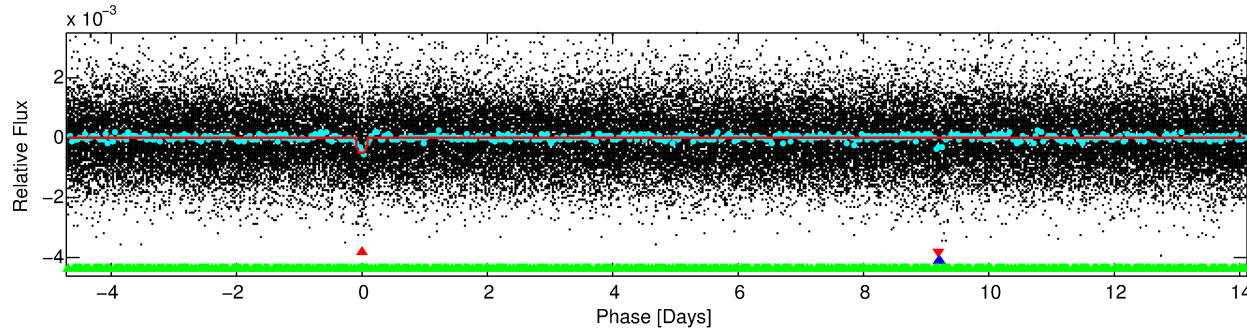
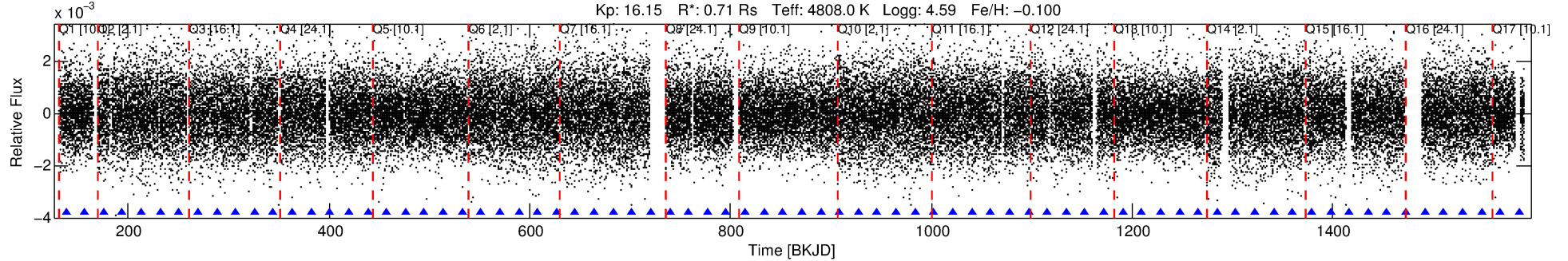
Notes: P₁:P₂ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m₂ and m₁ are the magnitudes of the parent and child. D₂/D₁ is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 2437112 Candidate: 1 of 3 Period: 18.799 d

KOI: K03461.01 Corr: 0.919

Kp: 16.15 R*: 0.71 Rs Teff: 4808.0 K Logg: 4.59 Fe/H: -0.100



DV Fit Results:

Period = 18.79855 [0.00023] d
Epoch = 138.0196 [0.0100] BKJD
Rp/R* = 0.0266 [0.0032]
a/R* = 12.19 [4.88]
b = 0.94 [0.05]
Seff = 15.85 [2.40]
Teq = 509 [19] K
Rp = 2.08 [0.31] Re
a = 0.1243 [0.0084] AU
Ag = 721.85 [206.38] [3.49σ]
Teff = 4078 [303] K [11.75σ]

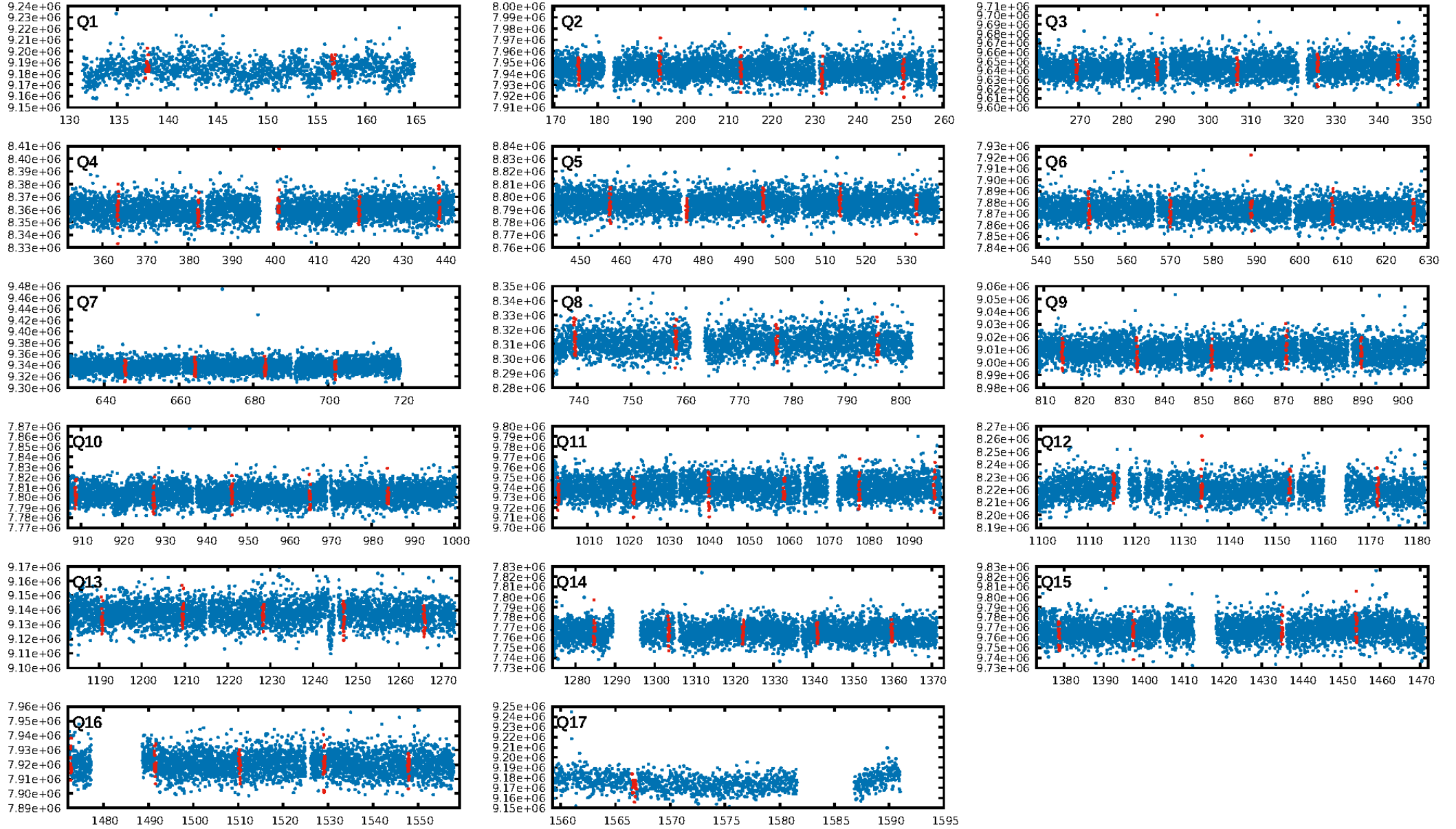
DV Diagnostic Results:

ShortPeriod-sig: 0.0% [0.00σ]
LongPeriod-sig: N/A
ModelChiSquare2-sig: 98.4%
ModelChiSquareGoF-sig: 100.0%
Bootstrap-pfa: 1.56e-19
RollingBand-fgt: 1.00 [71/71]
GhostDiagnostic-chr: -0.1325
Centroid-sig: 0.0%
Centroid-so: 16.335 arcsec [25.54σ]
OotOffset-rm: 7.926 arcsec [7.32σ]
KicOffset-rm: 6.247 arcsec [9.93σ]
OotOffset-st: 3/0/1/2 [6]
KicOffset-st: 3/0/1/2 [6]
DiffImageQuality-fgm: 0.83 [5/6]
DiffImageOverlap-fno: 0.94 [16/17]

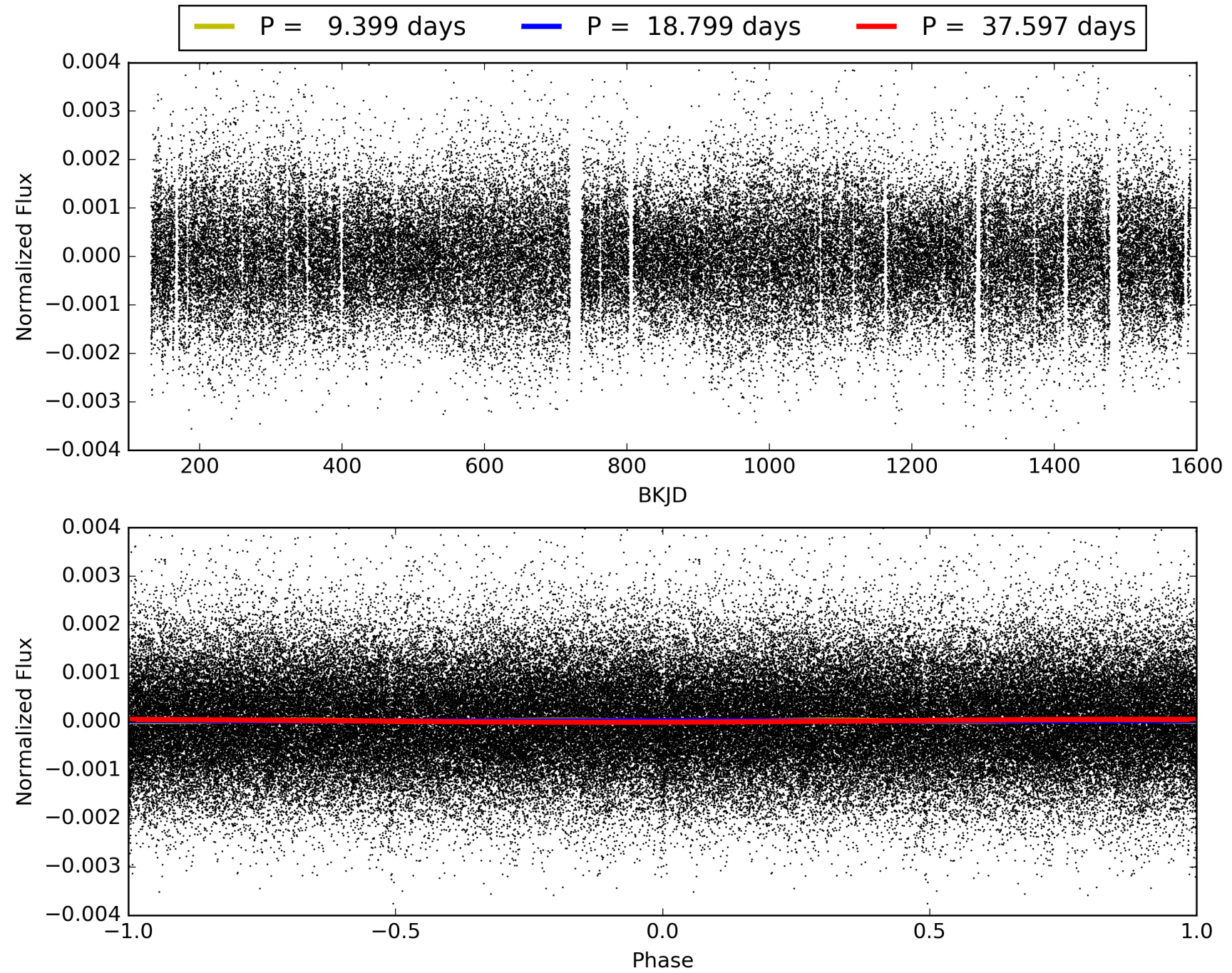
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:28:53 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 002437112-01, PDC Light Curves

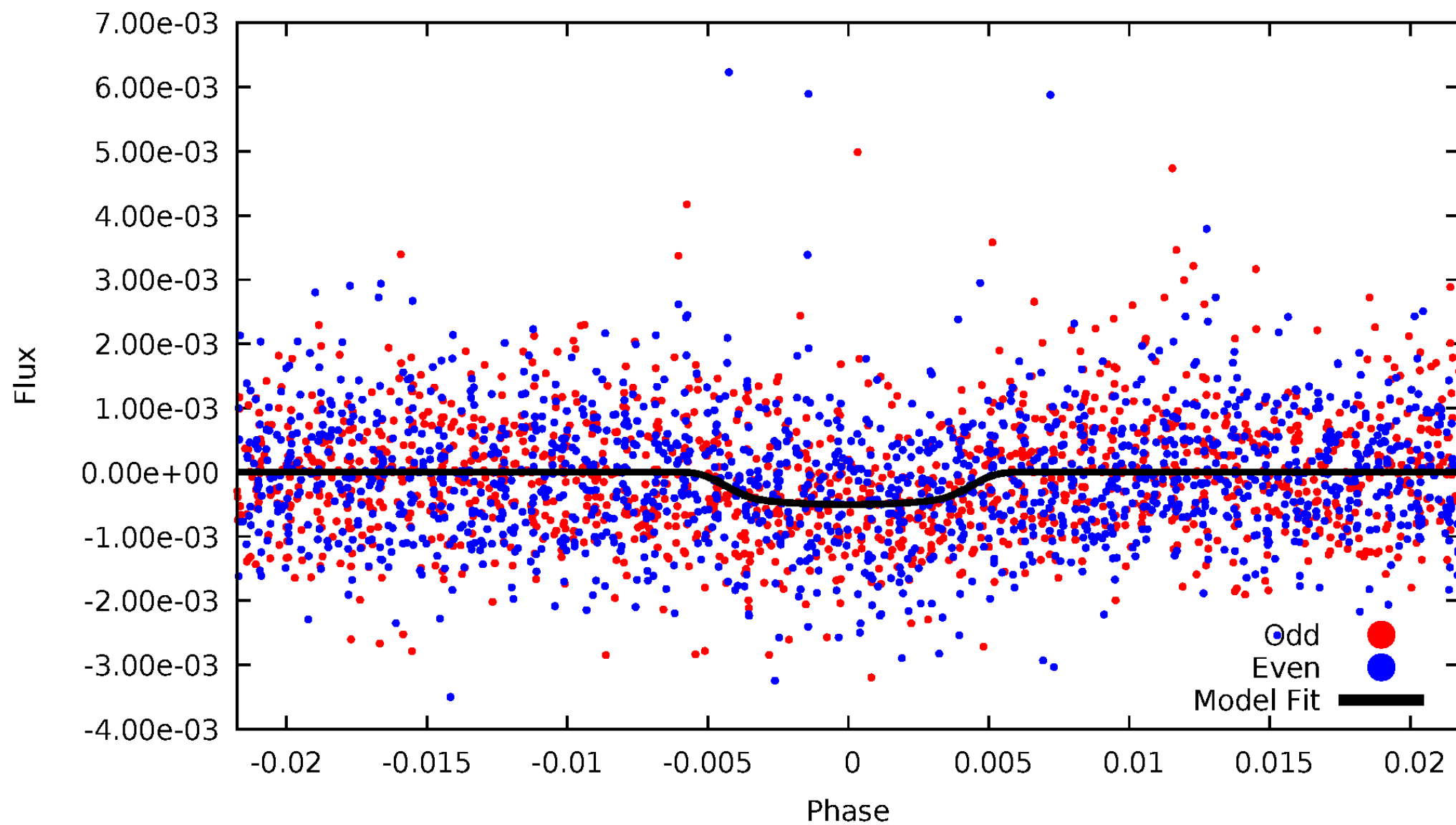


TCE 002437112-01



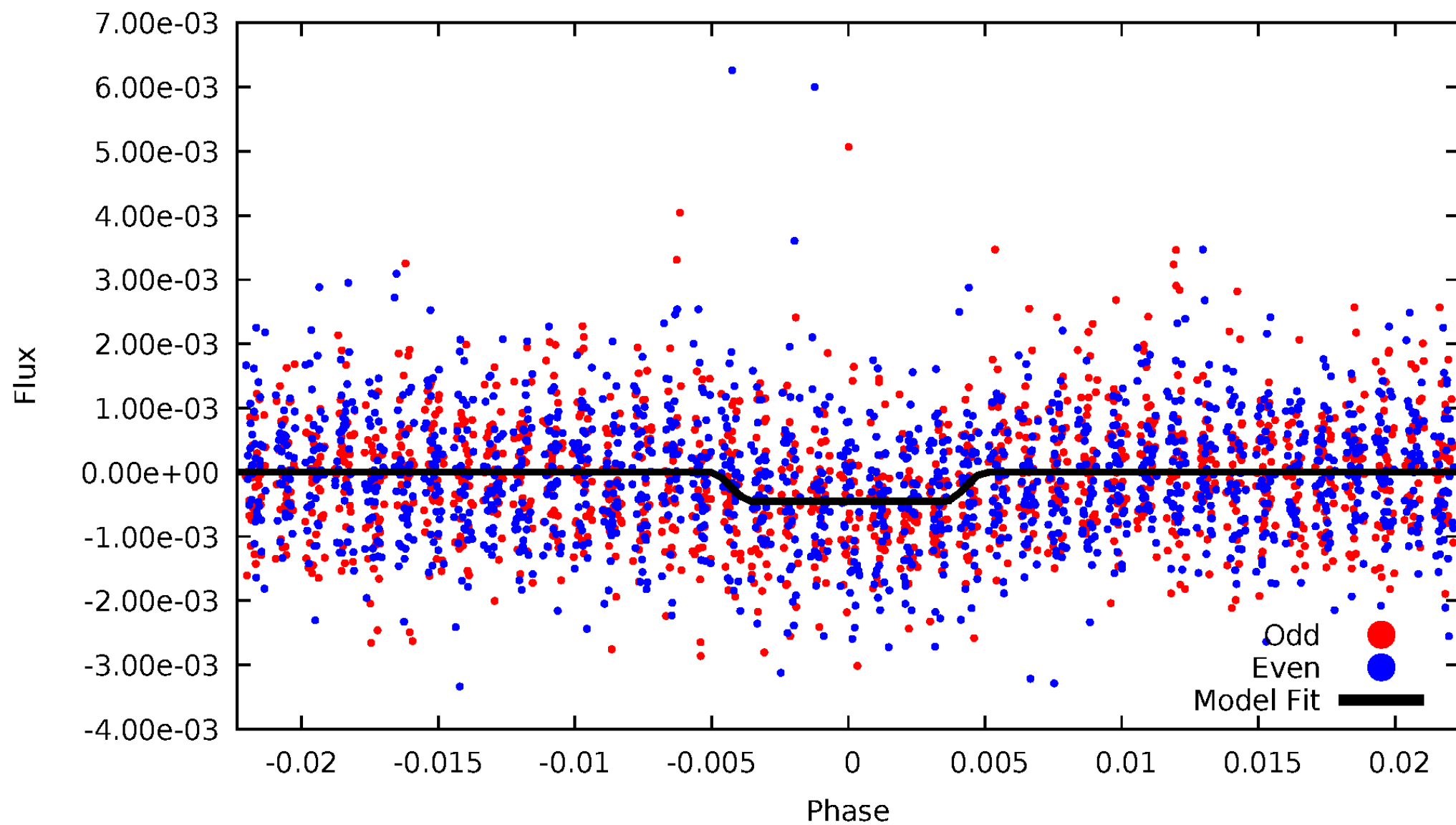
DV Odd/Even

TCE 002437112-01



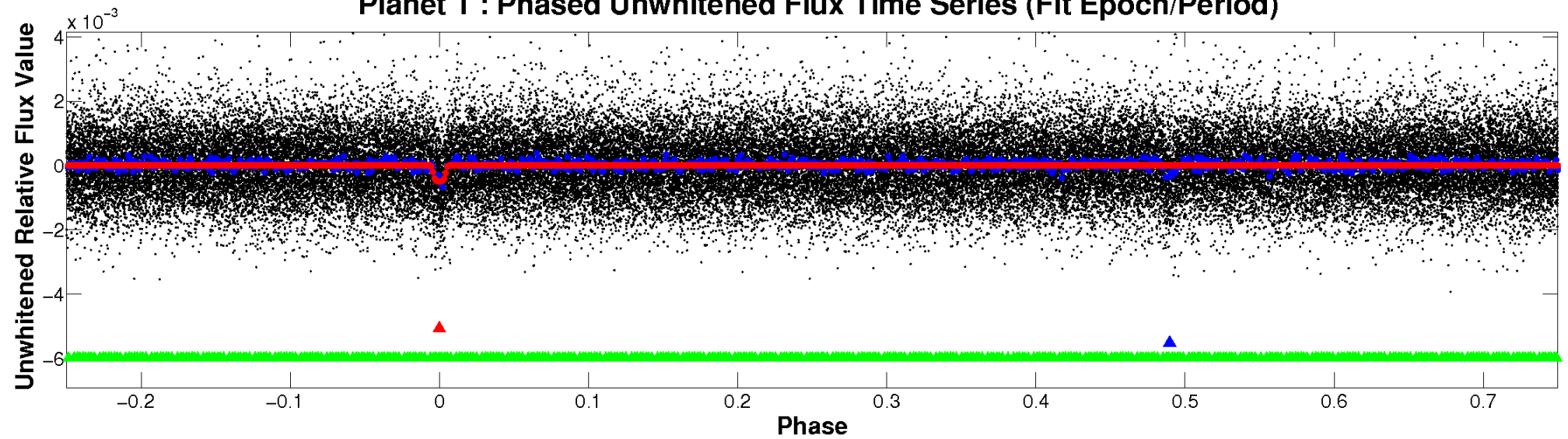
ALT Odd/Even

TCE 002437112-01

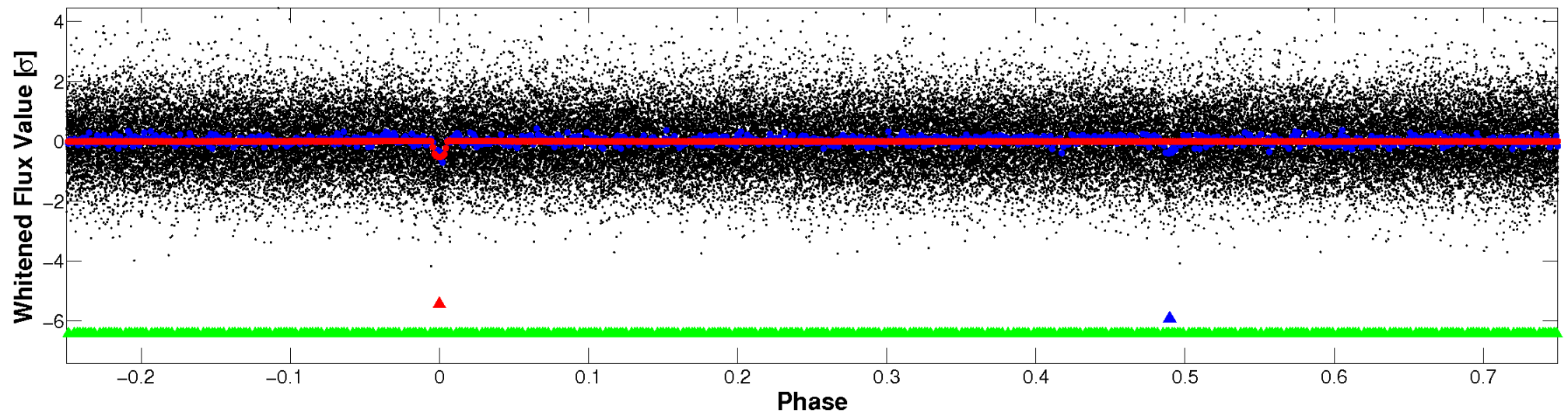


Non-Whitened Vs. Whitened Light Curve

Planet 1 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

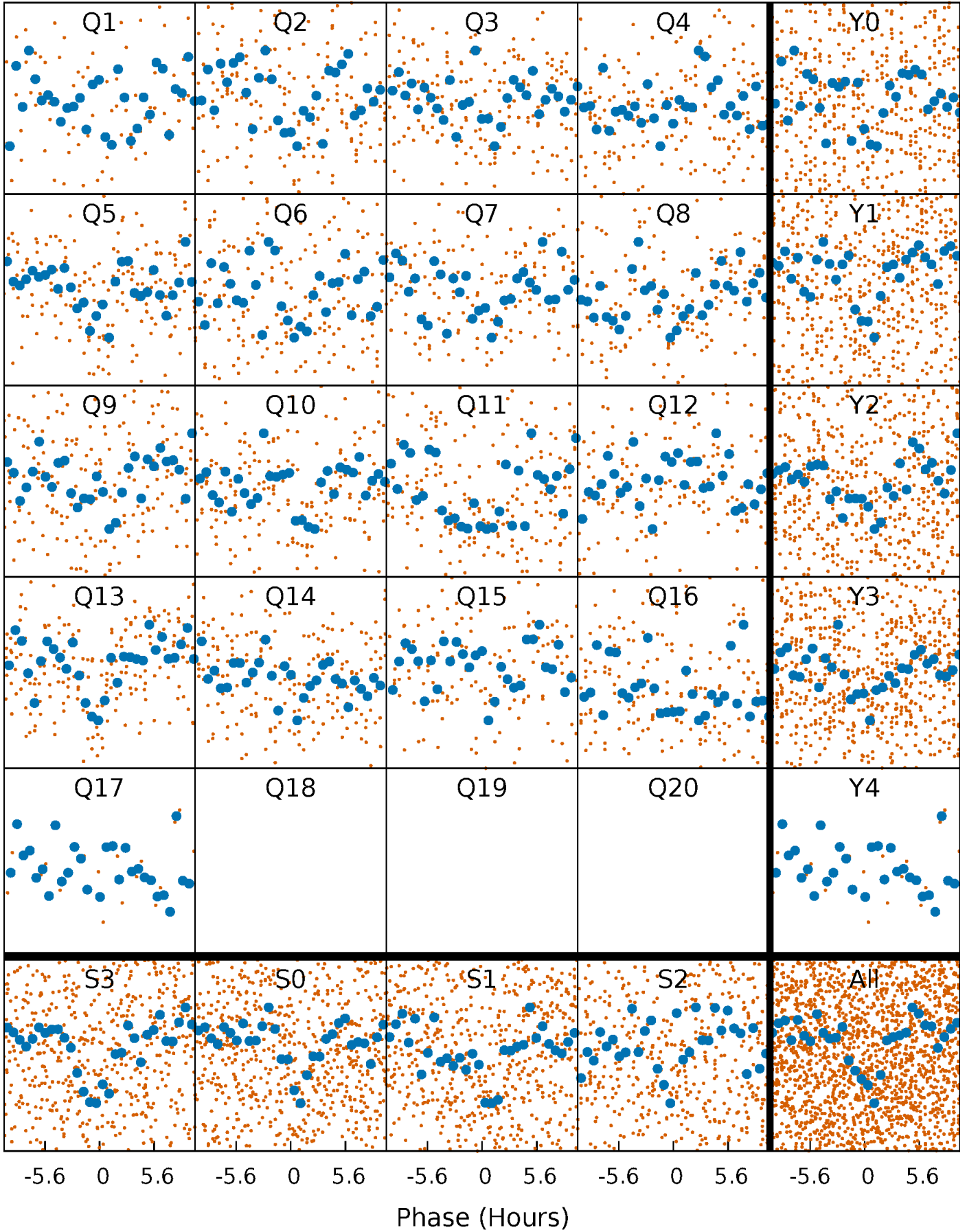


Planet 1 : Phased Whitened Flux Time Series (Fit Epoch/Period)



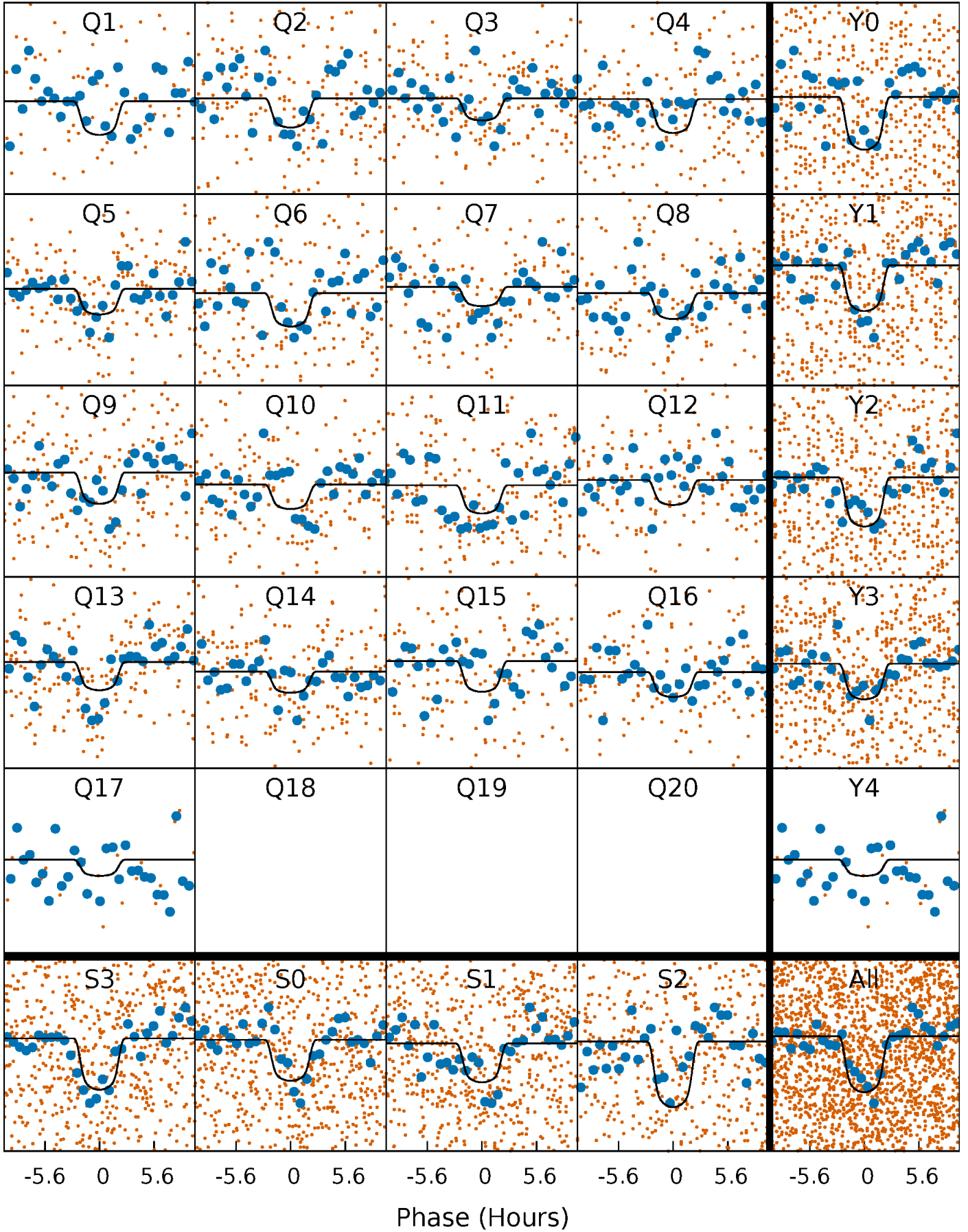
PDC Quarter-Phased Transit Curves

TCE 002437112-01 P= 18.798550 Days $T_0=138.019582$ (BKJD)



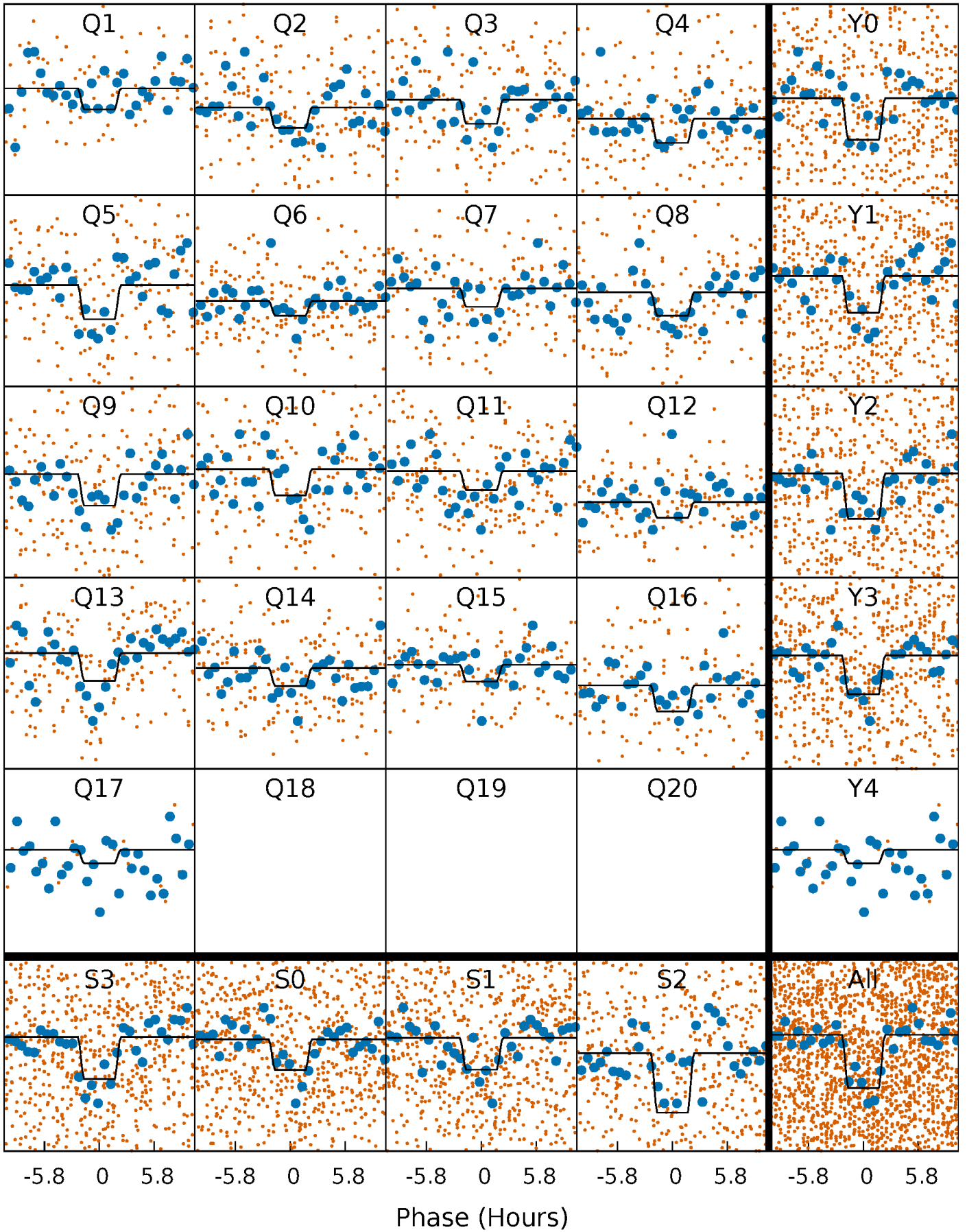
DV Quarter-Phased Transit Curves

TCE 002437112-01 P= 18.798550 Days $T_0=138.019582$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

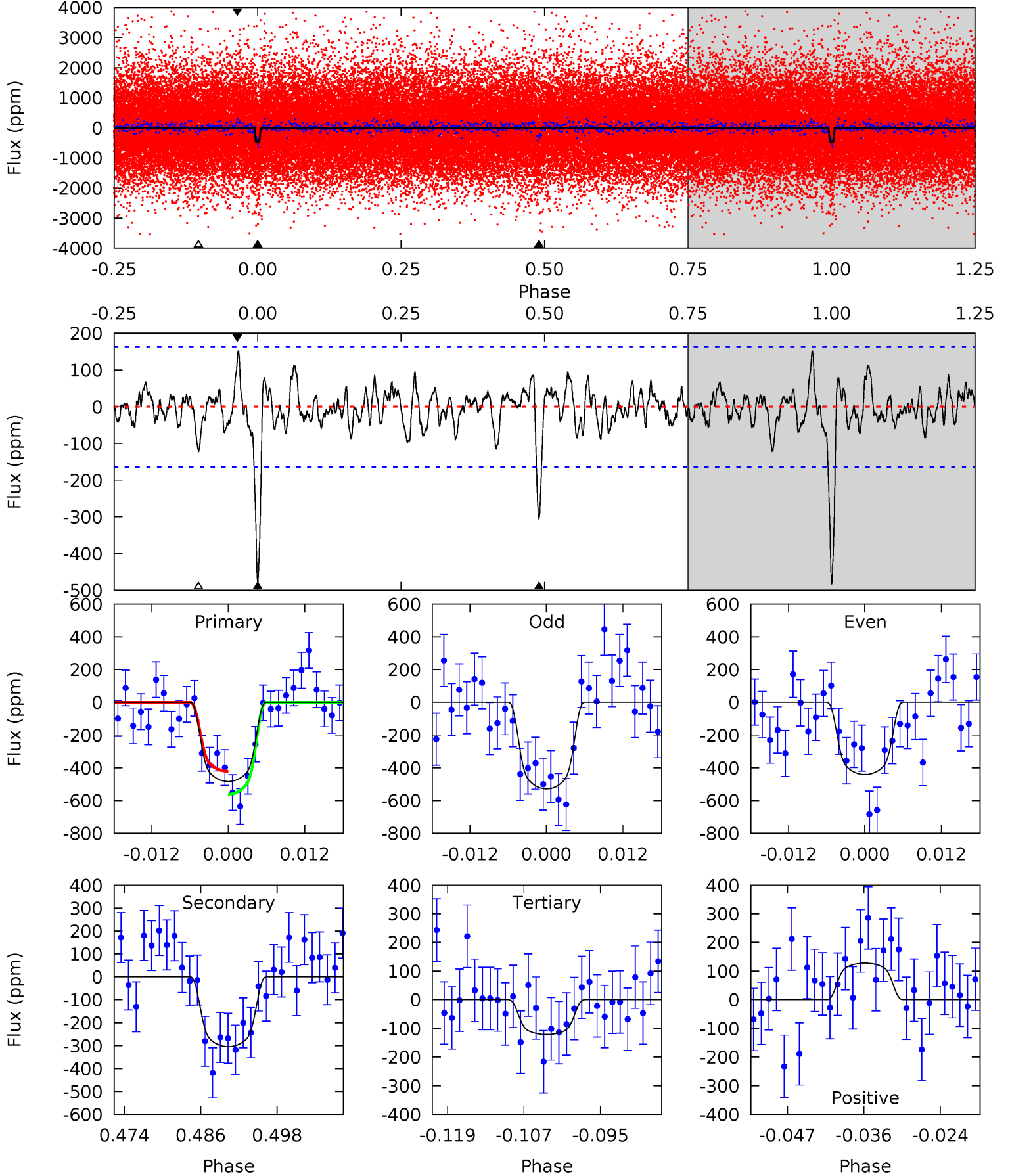
TCE 002437112-01 P= 18.798764 Days $T_0=138.014255$ (BKJD)



DV Model-Shift Uniqueness Test

002437112-01, P = 18.798550 Days, E = 119.221032 Days

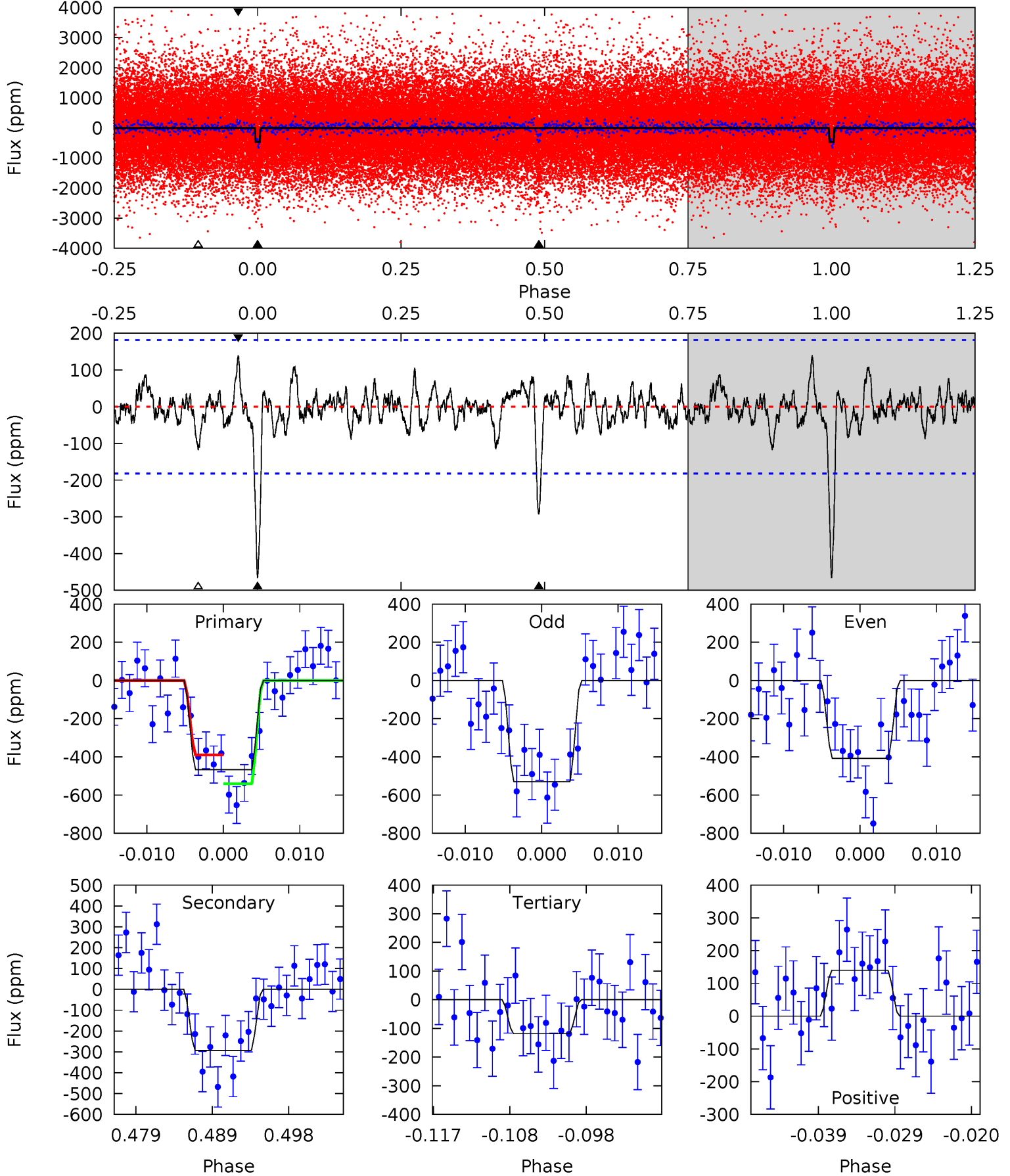
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
14.7	9.29	3.70	3.90	4.99	2.52	1.26	11.1	10.9	5.59	5.39	1.34	0.87	0.24	2.15



Alt Model-Shift Uniqueness Test

002437112-01, P = 18.798764 Days, E = 119.215491 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
12.9	8.11	3.28	3.86	5.03	2.58	1.06	9.64	9.05	4.84	4.25	1.69	0.89	0.23	2.08



Stellar Parameters For KIC 002437112

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	4808^{+146}_{-146}	$4.589^{+0.045}_{-0.041}$	$-0.100^{+0.300}_{-0.300}$	$0.715^{+0.062}_{-0.062}$	$0.723^{+0.075}_{-0.061}$	$2.789^{+0.623}_{-0.423}$
	+3%/-3%	+1%/-1%	+300%/-300%	+9%/-9%	+10%/-8%	+22%/-15%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 002437112-01 / KOI 3461.01

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-305 ± 33	$2.07^{+0.29}_{-0.24}$	711^{+26}_{-24}	4084^{+252}_{-203}	611^{+170}_{-148}
Alt.	-293 ± 36	$1.66^{+0.27}_{-0.27}$	710^{+25}_{-26}	4408^{+325}_{-278}	895^{+390}_{-230}

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

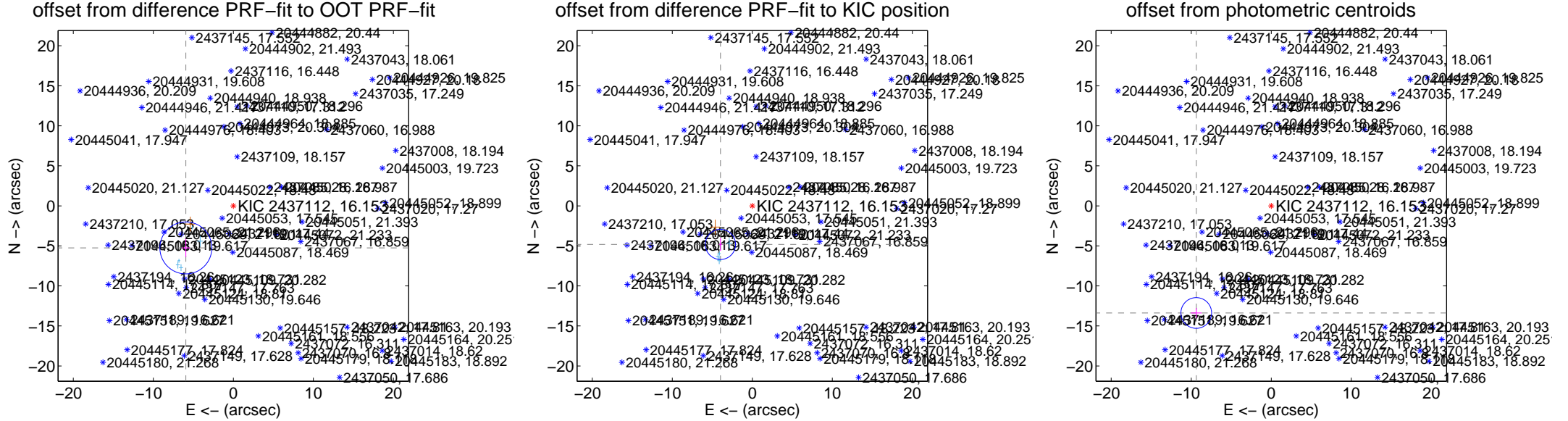
DV Centroid Data

Supplemental centroid analysis for 002437112-01. Kepler magnitude: 16.15. Transit SNR 10.97

There are 5 quarters with good PRF difference image offsets

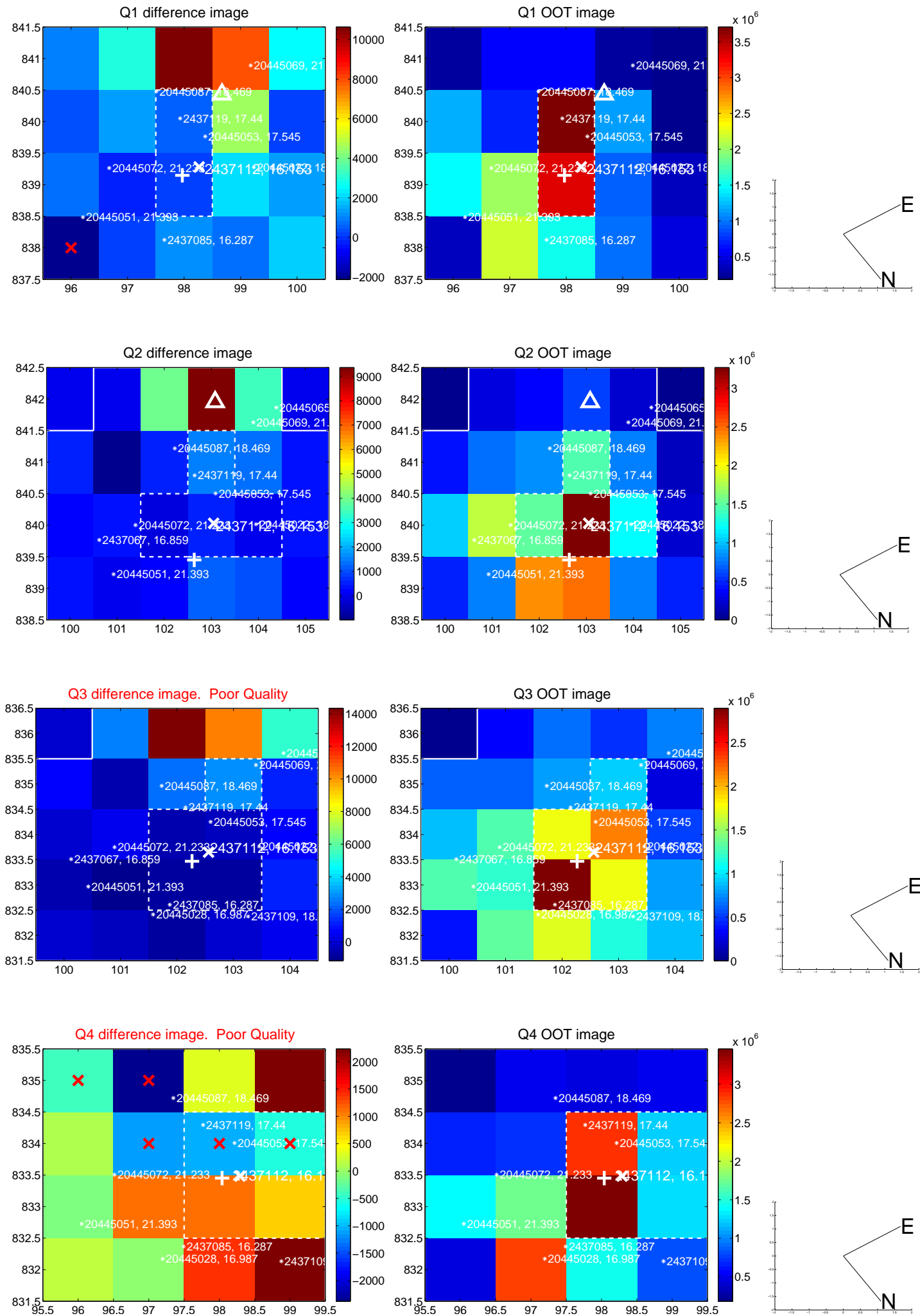
The direct PRF centroid is offset from the target star catalog position by about 0.85 arcsec

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	7.926 \pm 1.083	7.32	5.934 \pm 0.498	-5.253 \pm 1.138
PRF-fit source offset from KIC position	6.247 \pm 0.629	9.93	3.980 \pm 0.166	-4.815 \pm 0.804
photometric centroid source offset	16.34 \pm 0.64	25.54	9.37 \pm 0.67	-13.38 \pm 0.62

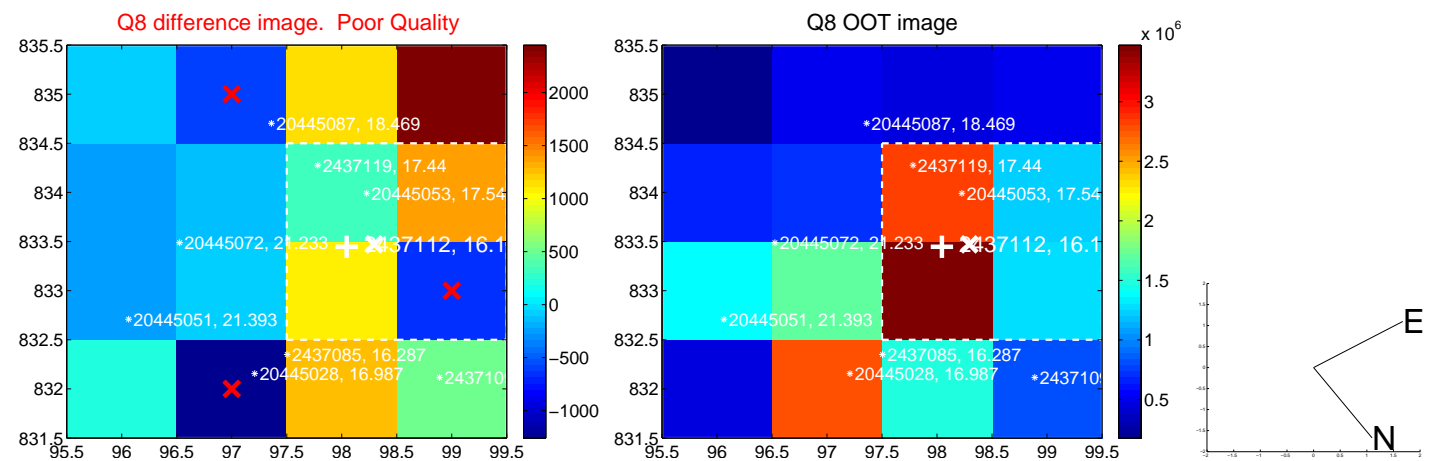
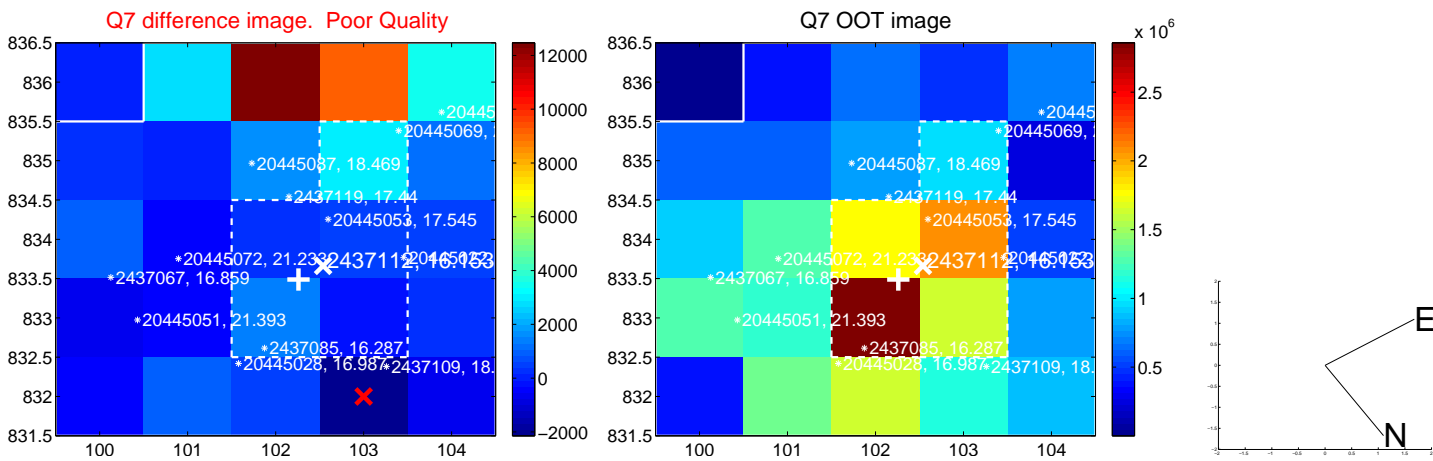
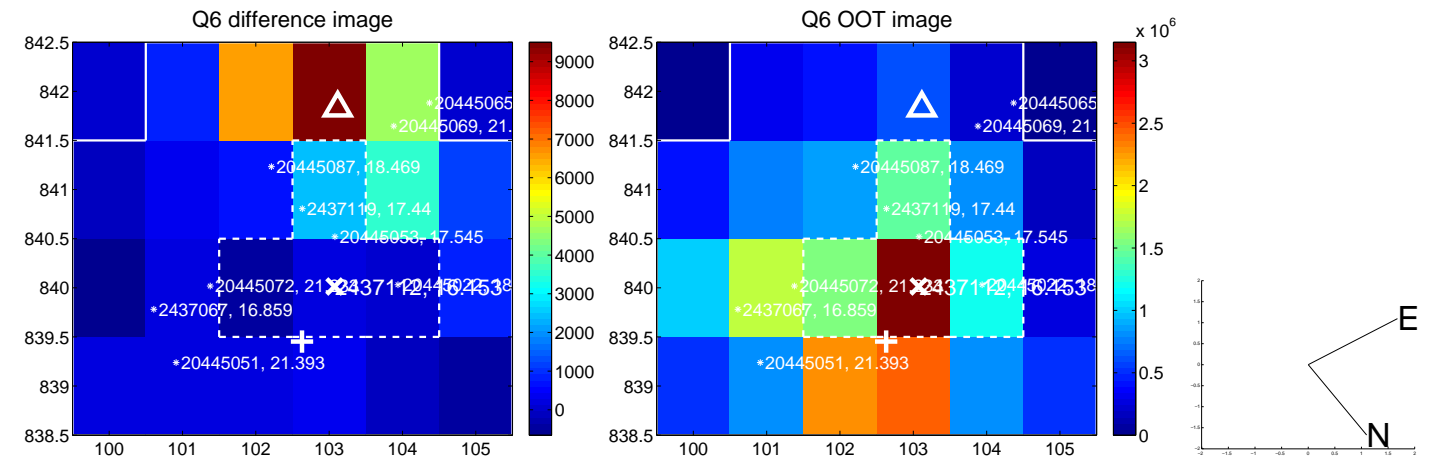
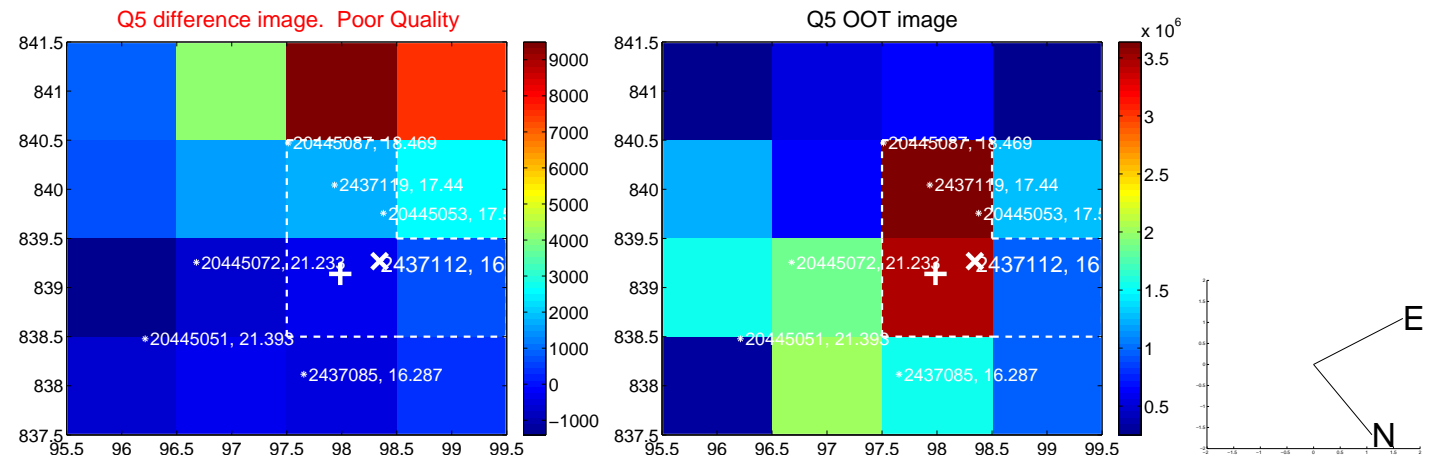


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. **Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets**; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

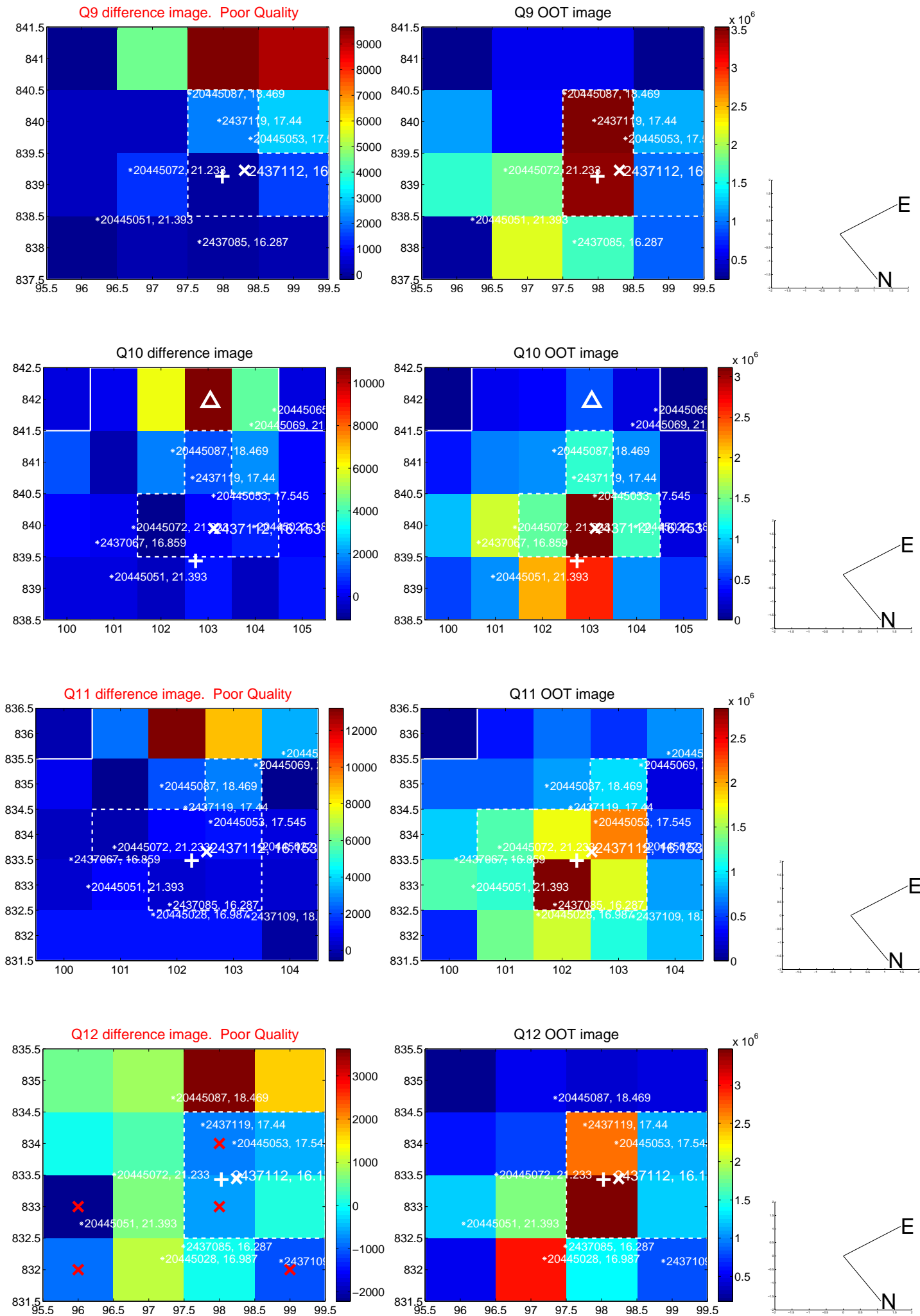
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



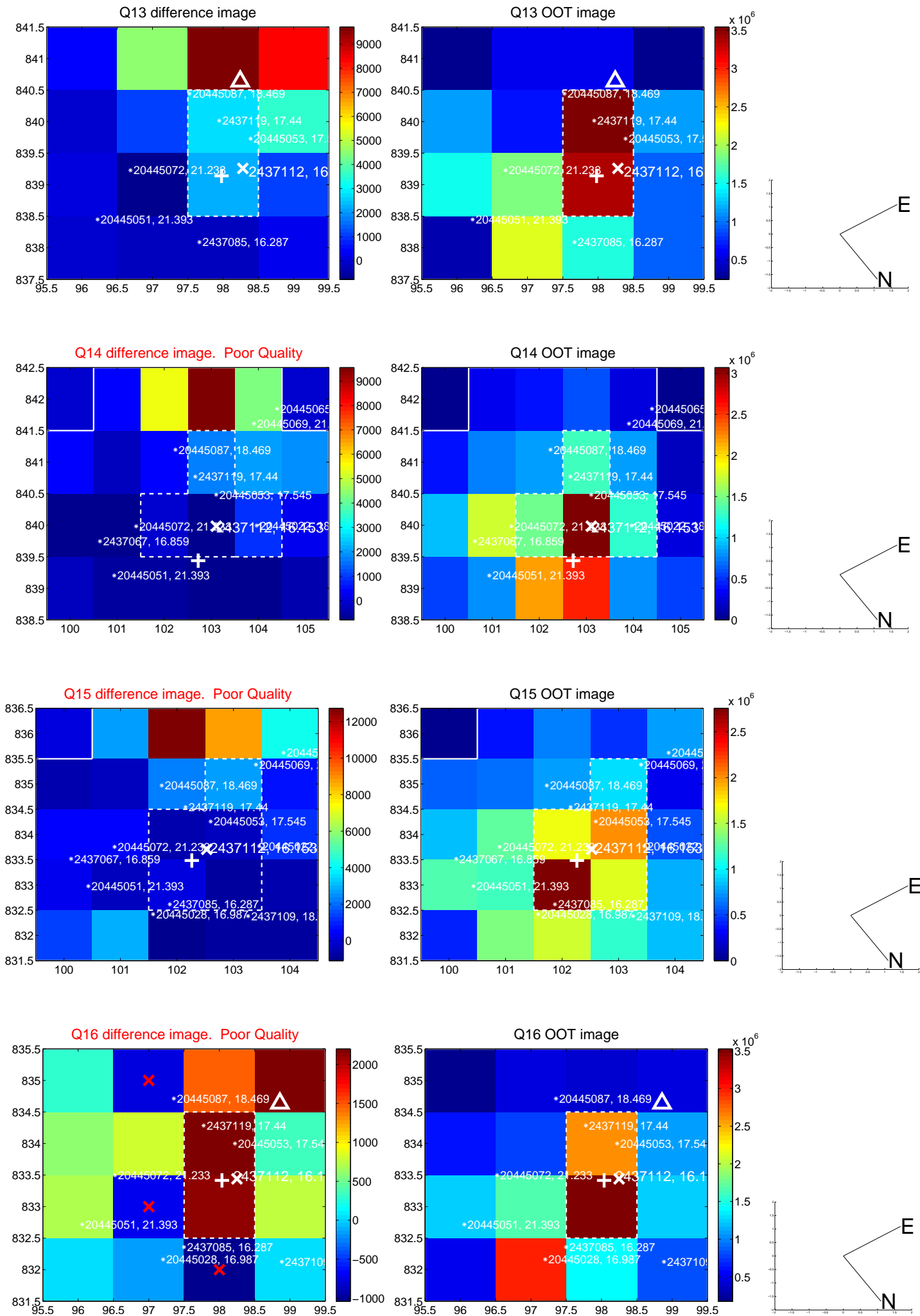
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



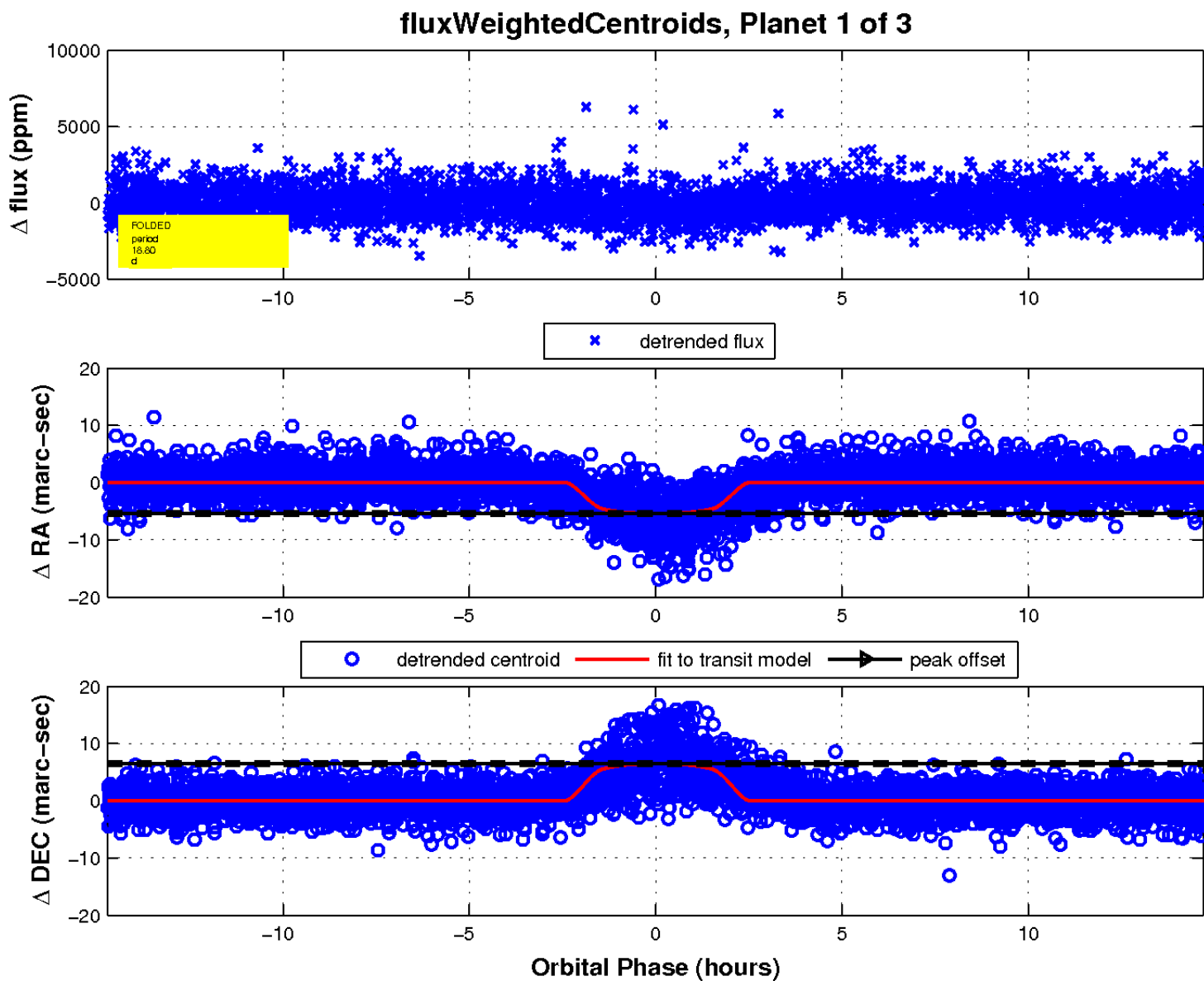
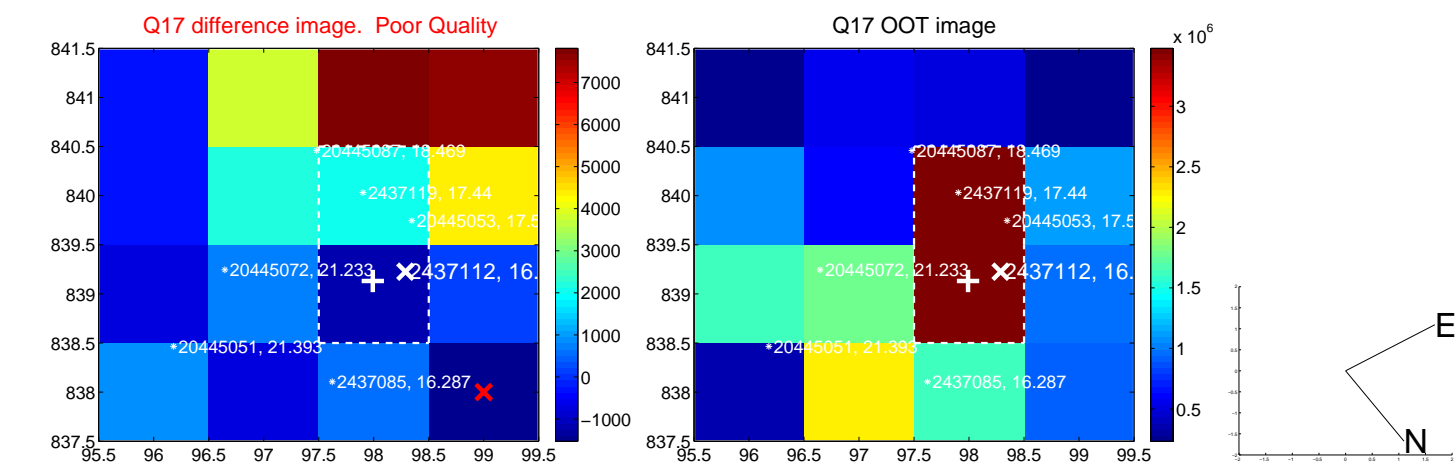
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

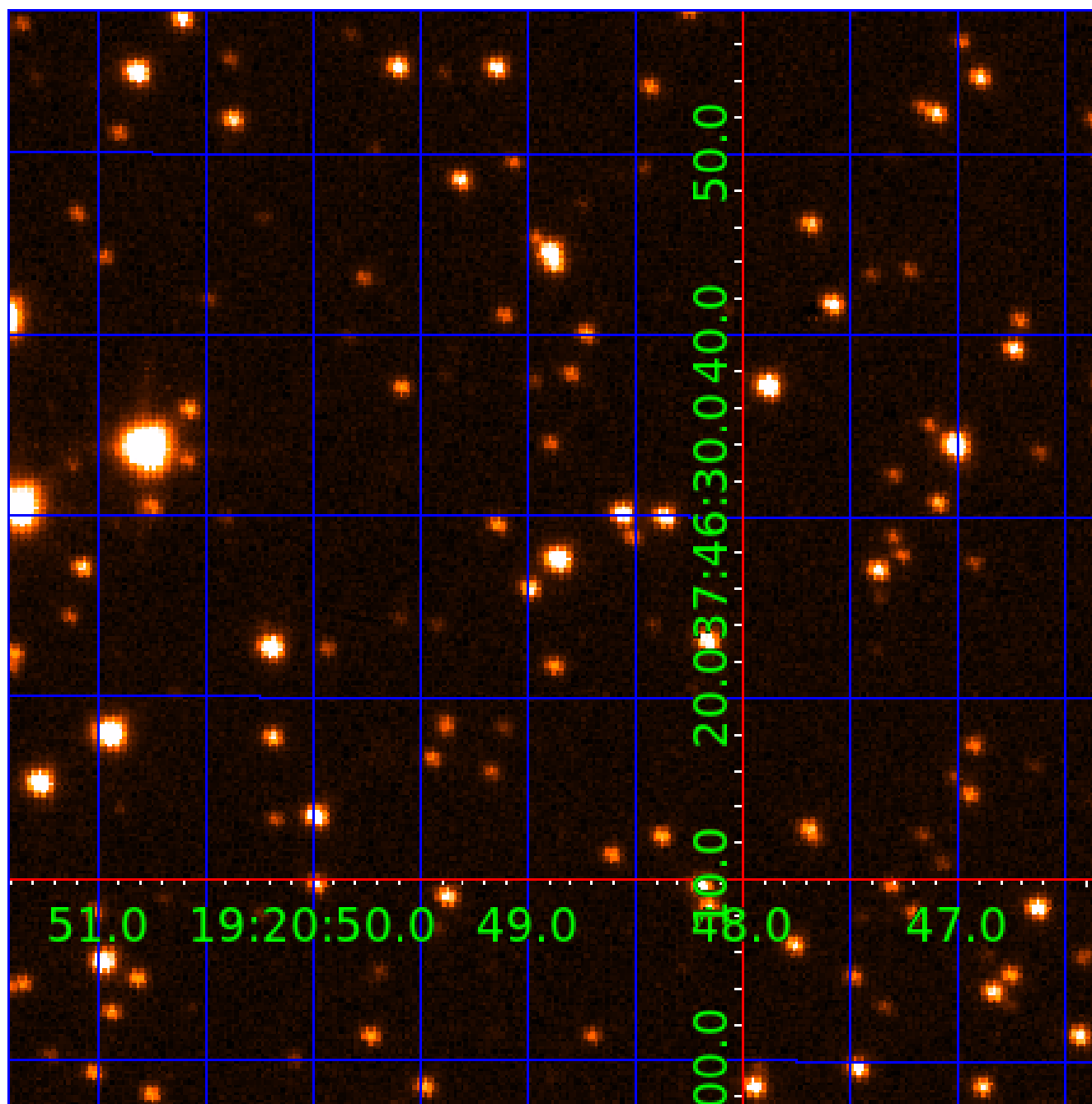


white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination



KIC 002437112

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
002437112-01	OBS	3461.01	18.798550	138.019582	501.3	4.906	9.5	11.0	0.71	4808	2.08	15.85
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Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002437112-01	OBS	FP	0.00	0	1	1	1	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_RESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
002437112-02	OBS	FP	0.00	1	1	1	1	IS_SEC_TCE—CENT_RESOLVED_OFFSET—EPHEM_MATCH
002437112-03	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_RESOLVED_OFFSET

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

Ephemeris Match Information For 002437112-02

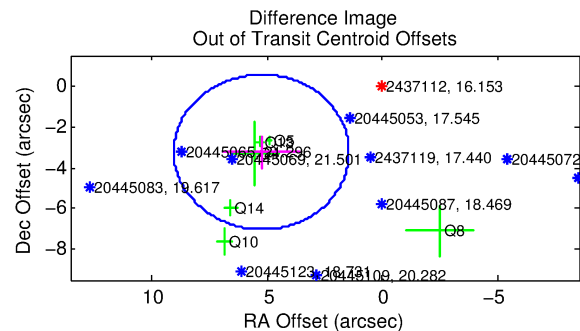
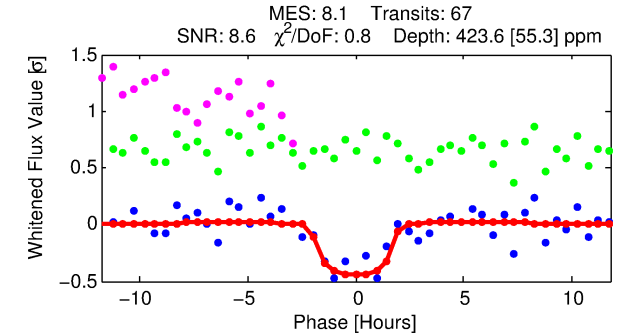
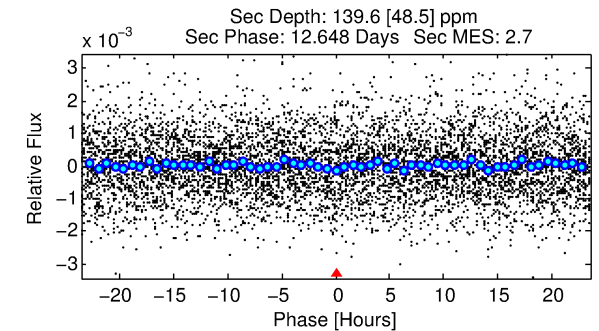
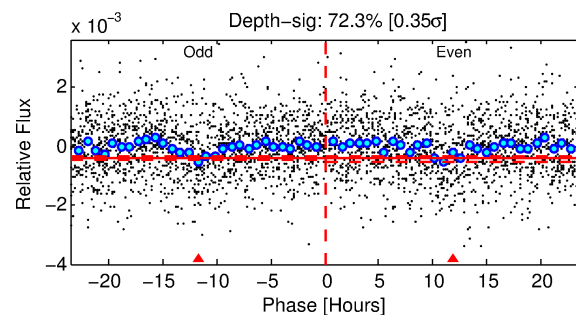
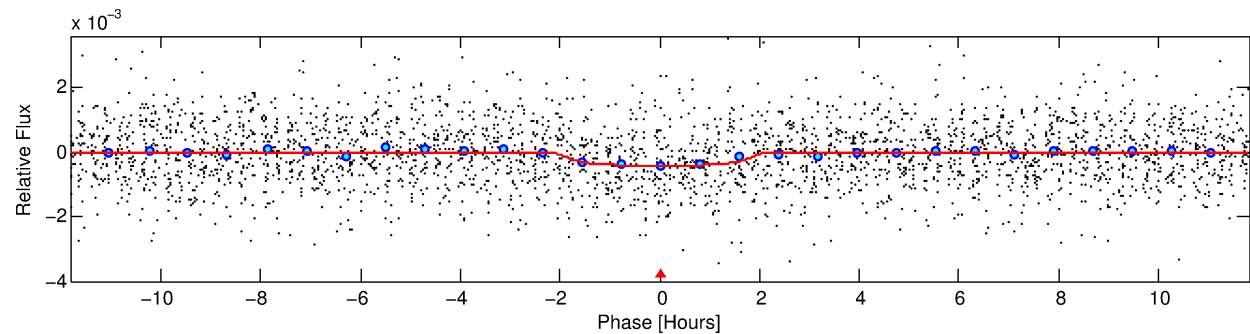
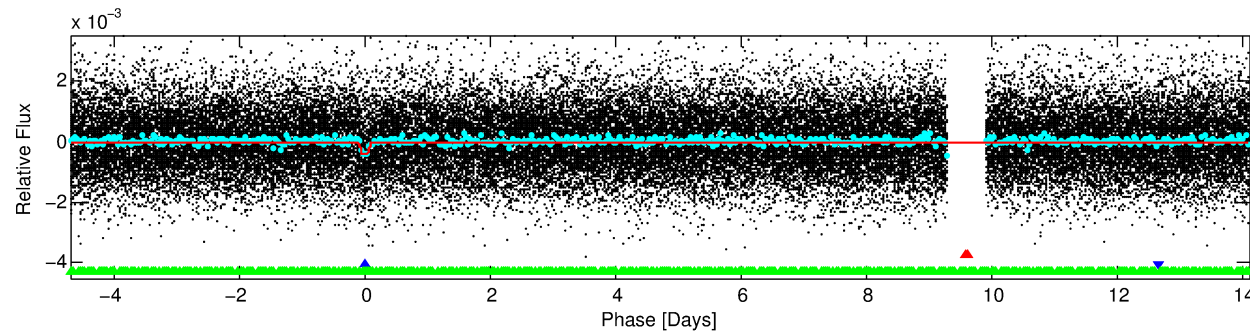
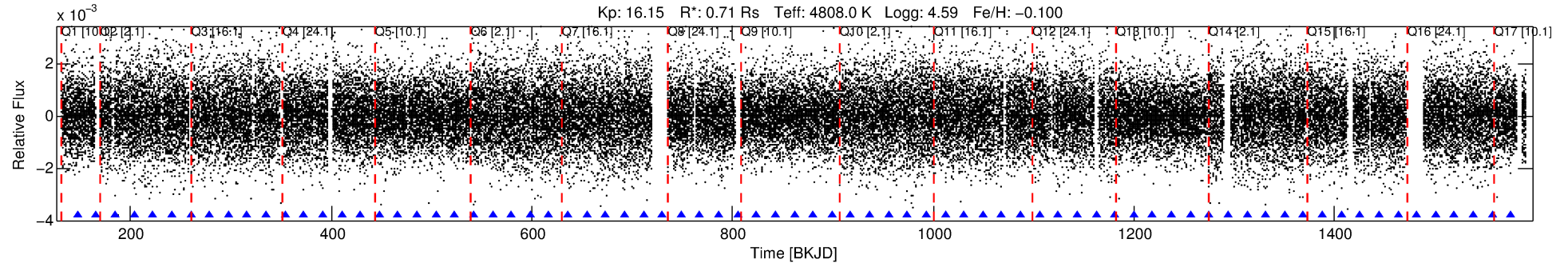
TCE (1)	KIC	Parent (2)	Parent KIC	P ₁ :P ₂	Dist (″)	Δ Row	Δ Col	m ₂	m ₁	D ₂ /D ₁	Mechanism	Flag	σ_P	σ_T
002437112-02	2437112	002437149-02	2437149	2:1	19.7	-5	1	17.63	16.15	692.53	Direct-PRF	0	0.66	0.02

Notes: P₁:P₂ is the period ratio. Dist is the distance in arcseconds. Δ Row and Δ Col are the number of pixels apart in row and column. m₂ and m₁ are the magnitudes of the parent and child. D₂/D₁ is the parent's transit depth divided by the child's. σ_P and σ_T are the significance of the match in period and epoch. For a match to be considered significant $\sigma_P < 5.0$ and $\sigma_T < 5.0$. Matches which have σ_P and σ_T very close to this cutoff should receive extra scrutiny, especially if the period ratio is very large.

DV One-Page Summary

KIC: 2437112 Candidate: 2 of 3 Period: 18.798 d
KOI: K03461 Corr: No Ephemeris Match

Kp: 16.15 R*: 0.71 Rs Teff: 4808.0 K Logg: 4.59 Fe/H: -0.100



DV Fit Results:

Period = 18.79846 [0.00026] d
Epoch = 147.2294 [0.0113] BKJD
Rp/R* = 0.0205 [0.0272]
a/R* = 25.59 [115.37]
b = 0.74 [2.82]
Seff = 15.85 [2.40]
Teq = 509 [19] K
Rp = 1.60 [2.13] Re
a = 0.1243 [0.0084] AU
Ag = 463.75 [1243.51] [0.37σ]
Teff = 3651 [2448] K [1.28σ]

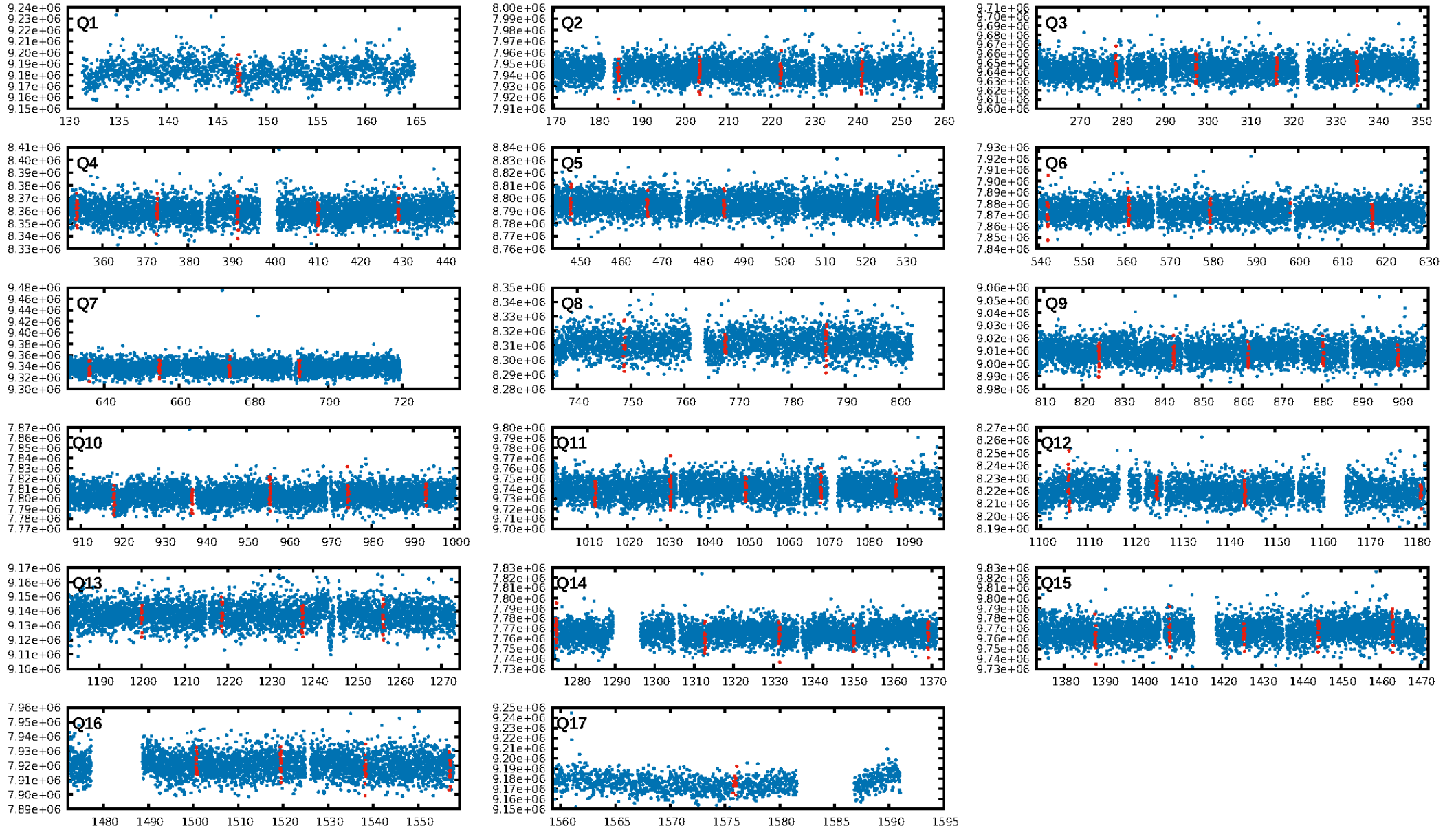
DV Diagnostic Results:

ShortPeriod-sig: 100.0% [49.07σ]
LongPeriod-sig: 0.0% [0.00σ]
ModelChiSquare2-sig: 85.5%
ModelChiSquareGof-sig: 100.0%
Bootstrap-pfa: 2.53e-15
RollingBand-fgt: 1.00 [65/65]
GhostDiagnostic-chr: -0.3187
Centroid-sig: 0.0%
Centroid-so: 15.599 arcsec [18.50σ]
OotOffset-rm: 6.155 arcsec [4.88σ]
KicOffset-rm: 5.119 arcsec [6.91σ]
OotOffset-st: 2/0/2/2 [6]
KicOffset-st: 2/0/2/2 [6]
DiffImageQuality-fgm: 0.67 [4/6]
DiffImageOverlap-fno: 1.00 [17/17]

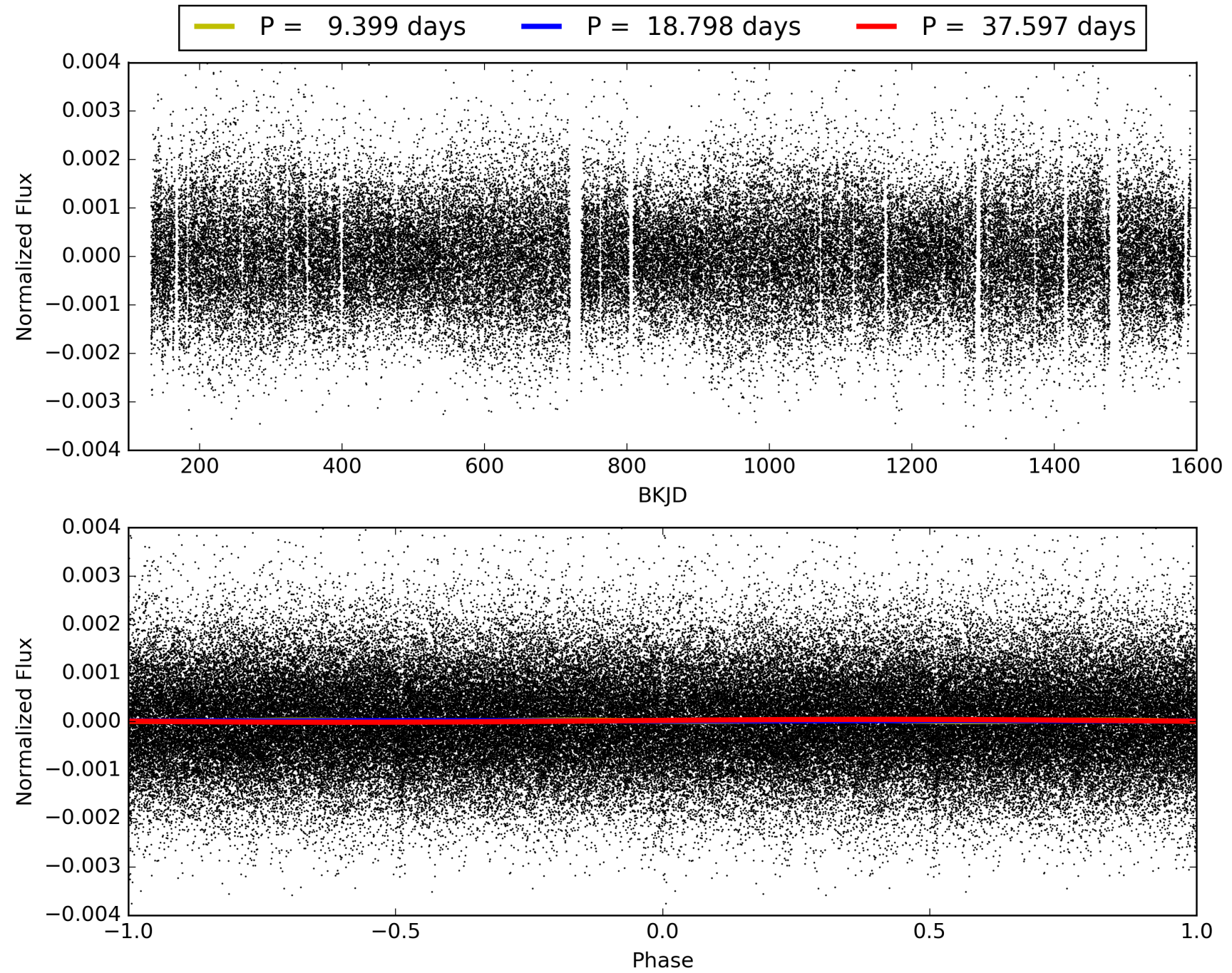
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:28:59 Z

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TCE 002437112-02, PDC Light Curves

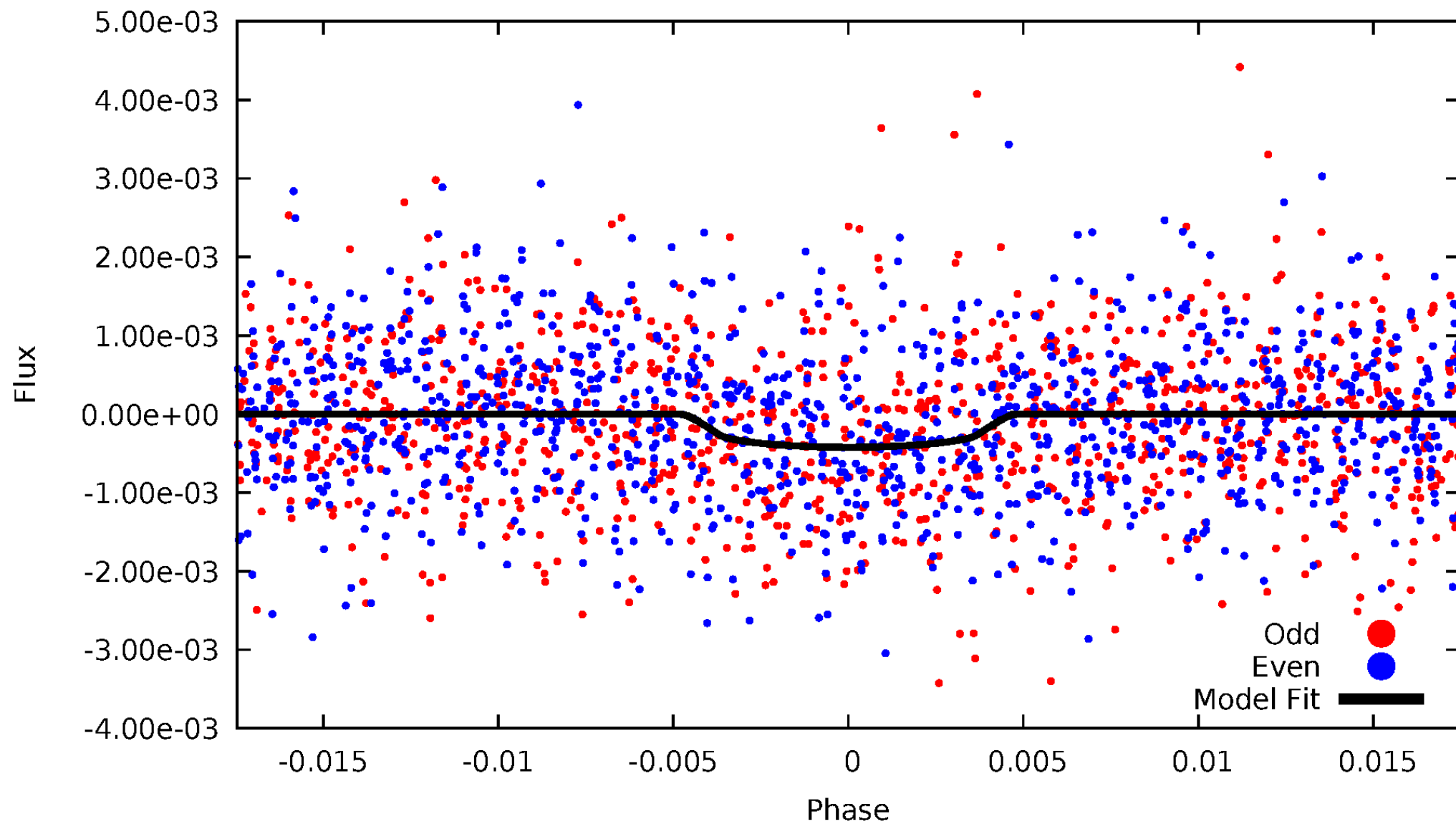


TCE 002437112-02



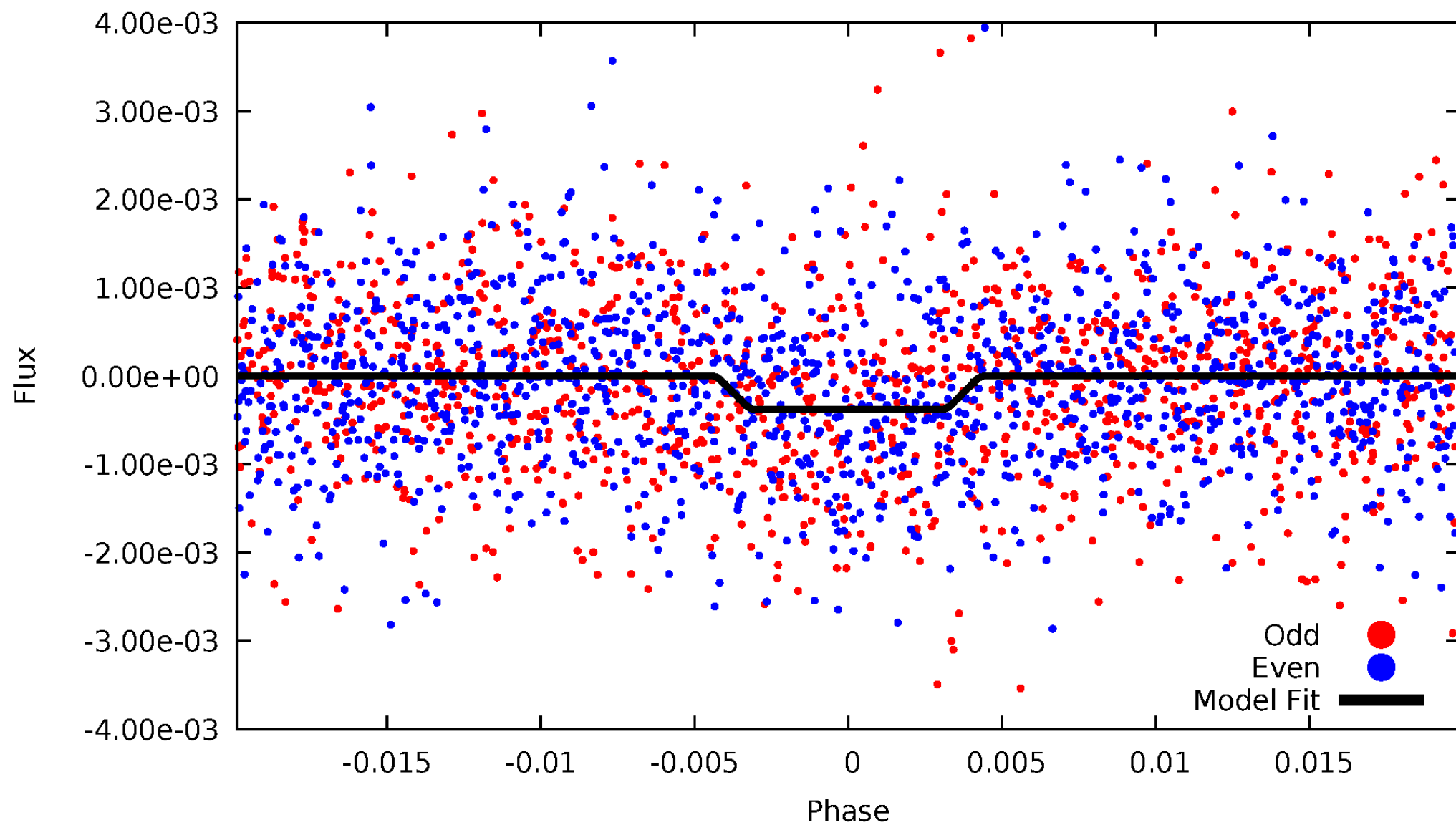
DV Odd/Even

TCE 002437112-02



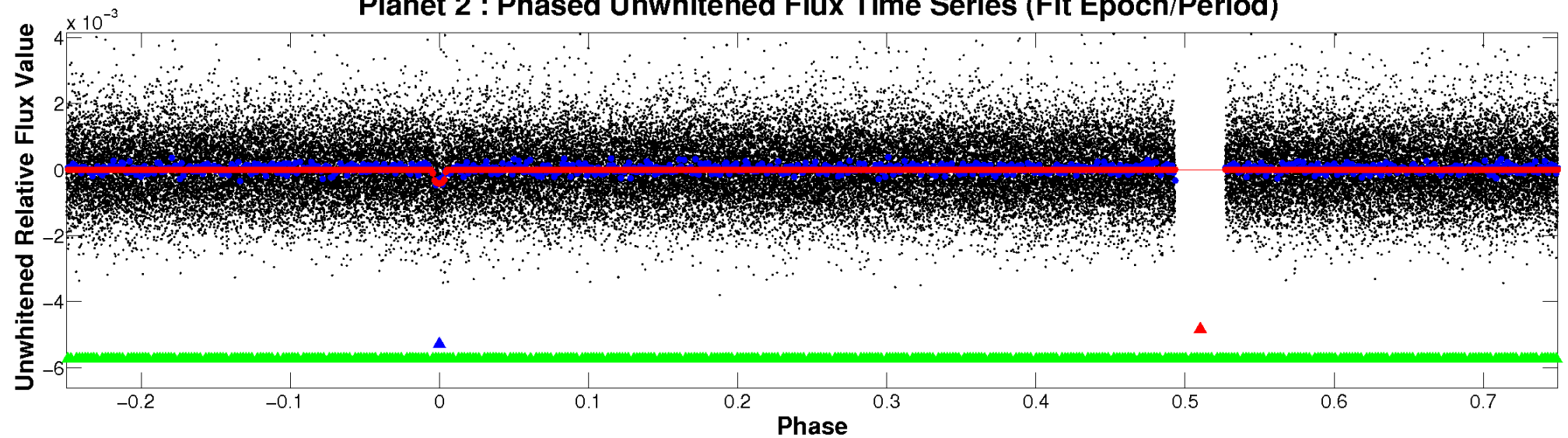
ALT Odd/Even

TCE 002437112-02

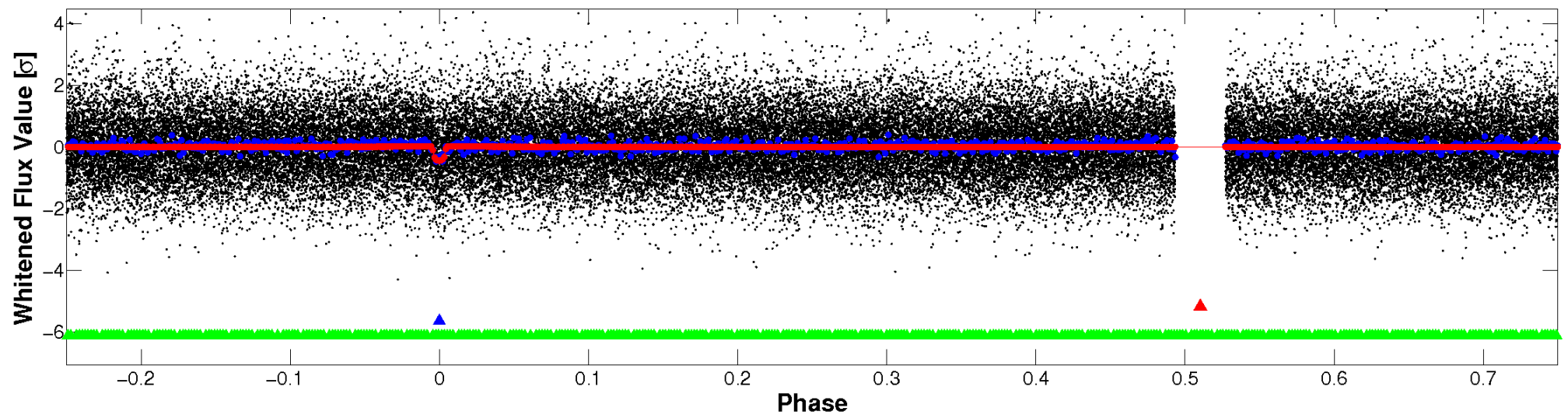


Non-Whitened Vs. Whitened Light Curve

Planet 2 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

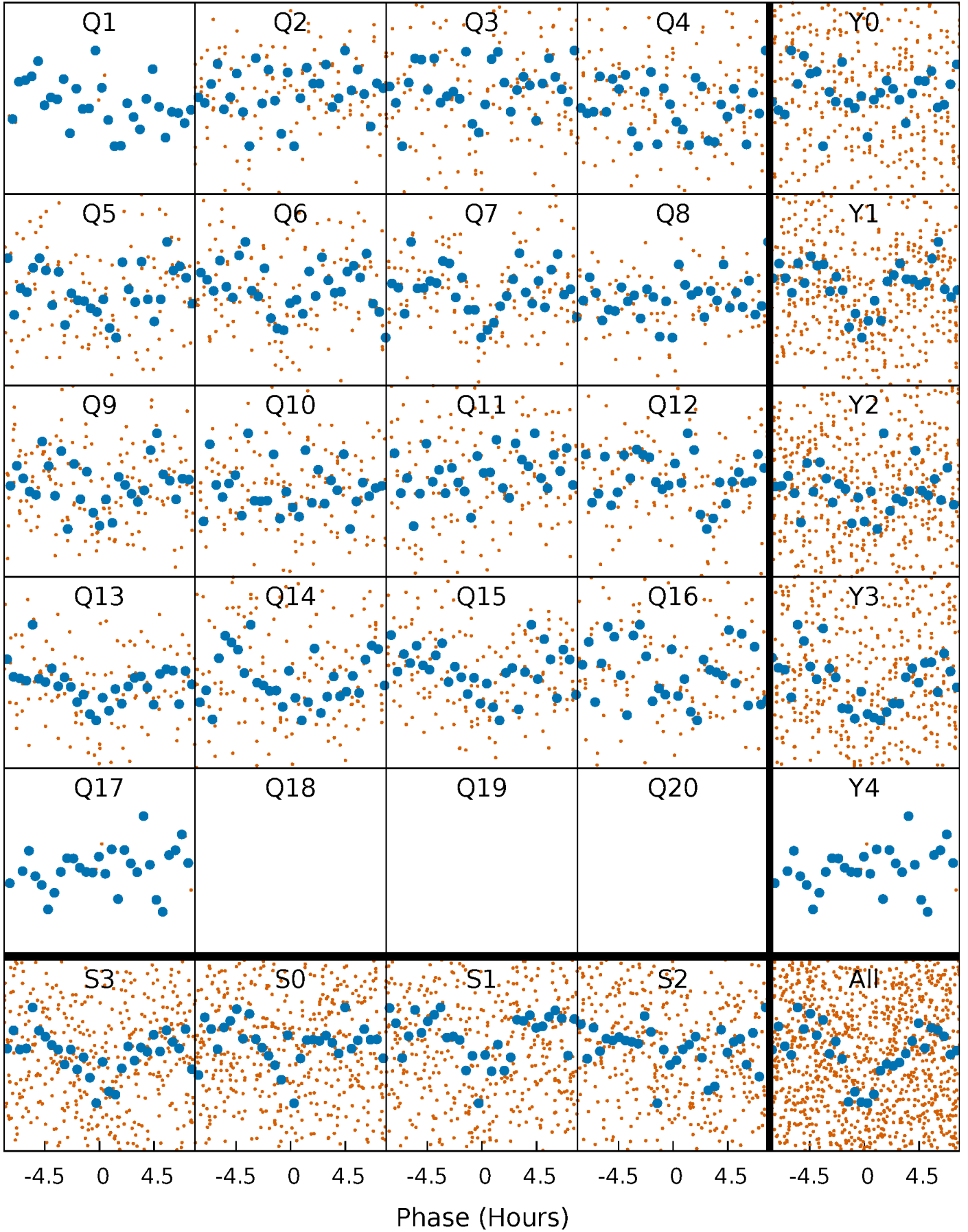


Planet 2 : Phased Whitened Flux Time Series (Fit Epoch/Period)



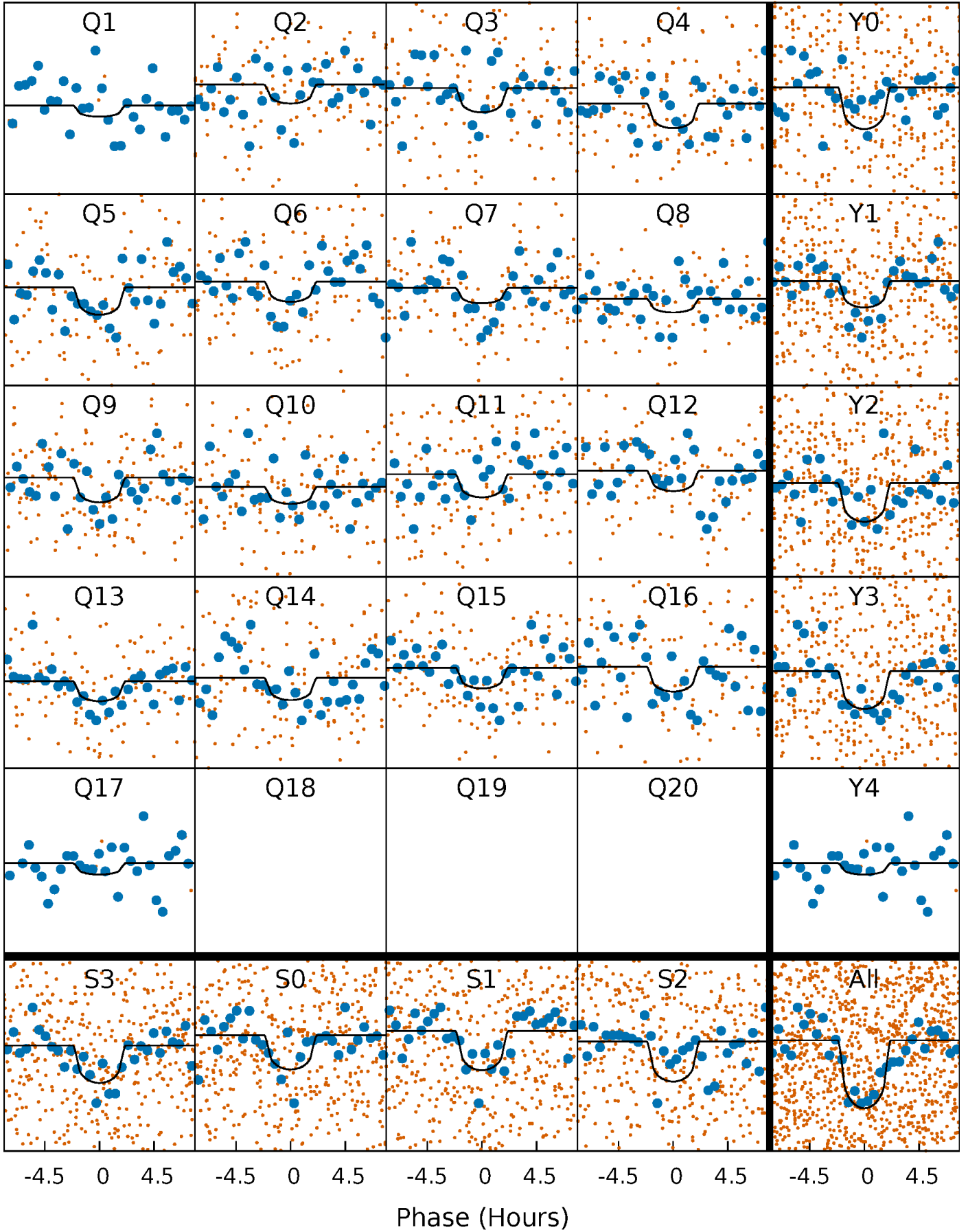
PDC Quarter-Phased Transit Curves

TCE 002437112-02 P= 18.798463 Days $T_0=147.229359$ (BKJD)



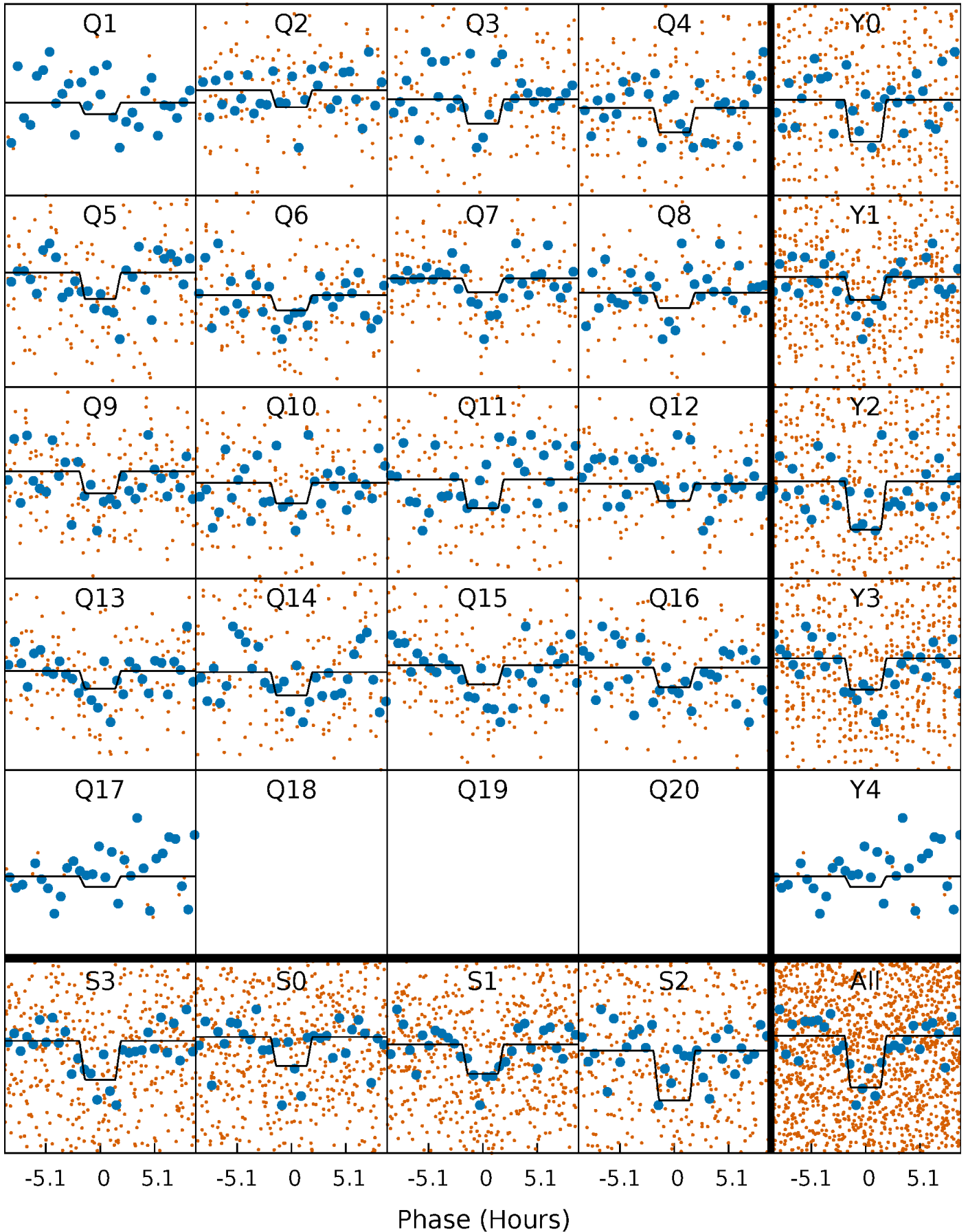
DV Quarter-Phased Transit Curves

TCE 002437112-02 P= 18.798463 Days $T_0=147.229359$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

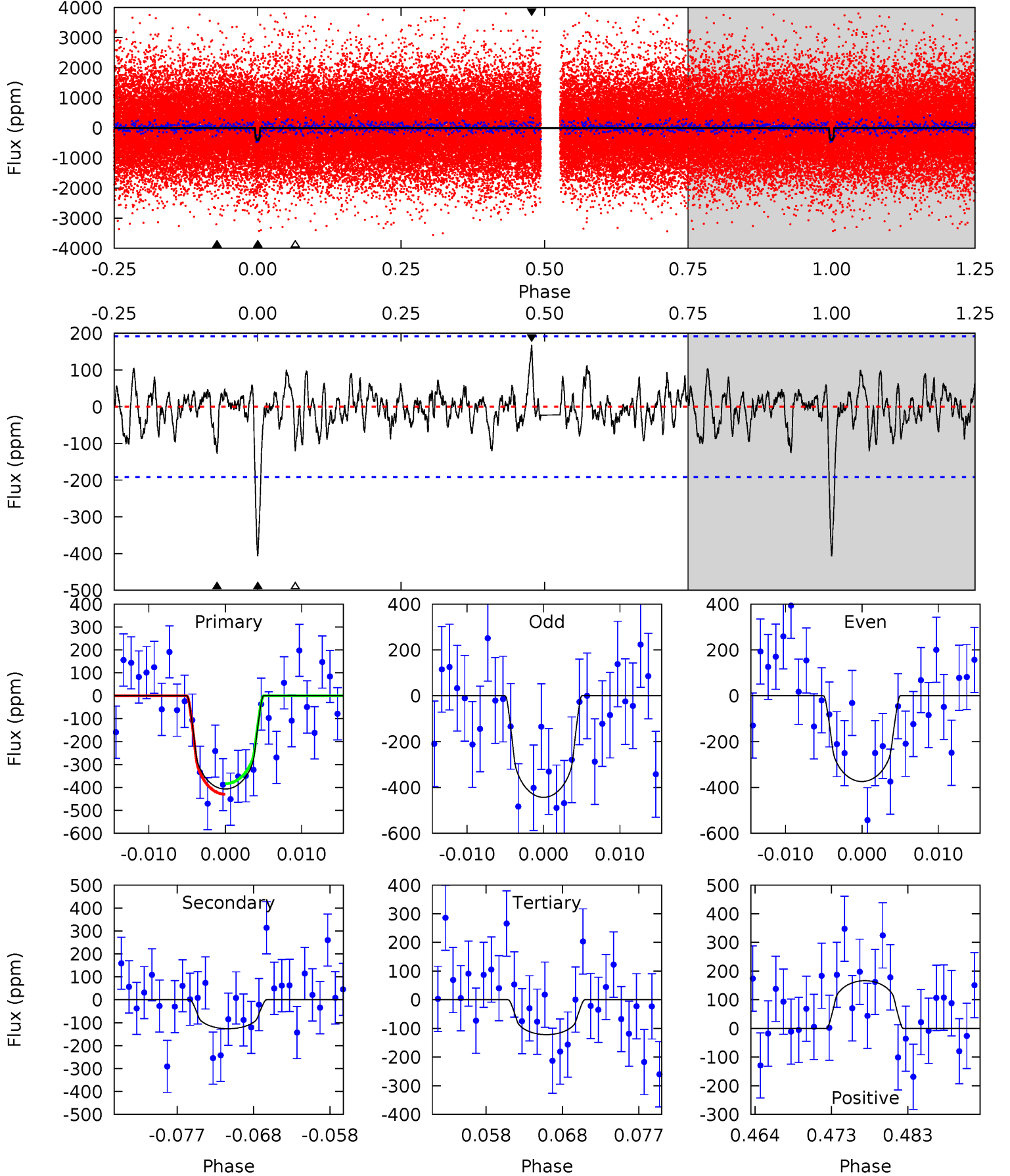
TCE 002437112-02 P= 18.798685 Days $T_0=147.218771$ (BKJD)



DV Model-Shift Uniqueness Test

002437112-02, P = 18.798463 Days, E = 128.430896 Days

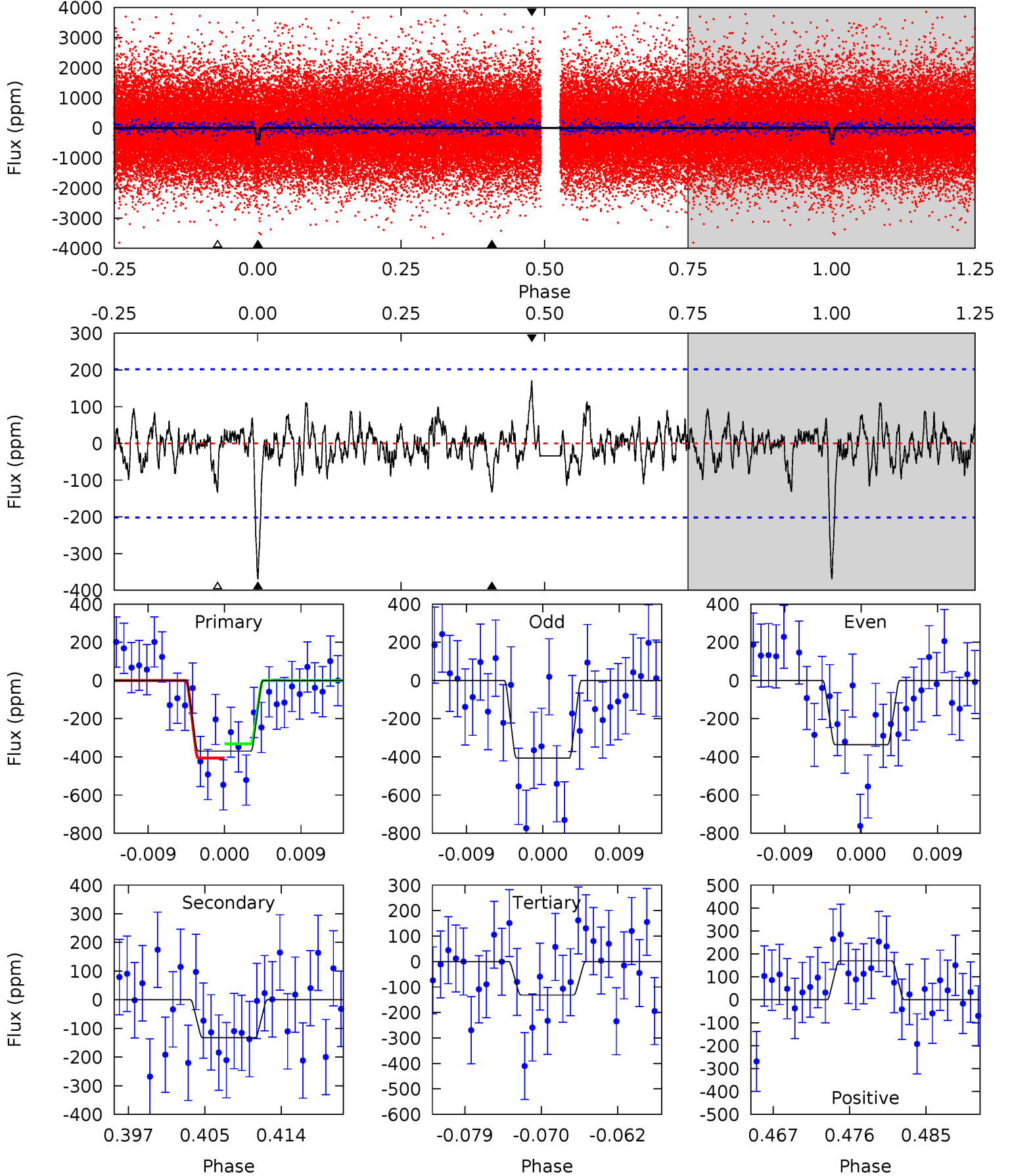
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
10.7	3.32	3.20	4.37	5.03	2.59	1.09	7.49	6.32	0.12	-1.05	0.91	1.11	0.29	0.61



Alt Model-Shift Uniqueness Test

002437112-02, $P = 18.798685$ Days, $E = 128.420086$ Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.25	3.31	3.29	4.24	5.05	2.62	1.01	5.96	5.01	0.02	-0.93	0.88	1.02	0.31	0.94



Stellar Parameters For KIC 002437112

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (g \cdot \text{cm}^{-3})$
	4808^{+146}_{-146}	$4.589^{+0.045}_{-0.041}$	$-0.100^{+0.300}_{-0.300}$	$0.715^{+0.062}_{-0.062}$	$0.723^{+0.075}_{-0.061}$	$2.789^{+0.623}_{-0.423}$
	+3%/-3%	+1%/-1%	+300%/-300%	+9%/-9%	+10%/-8%	+22%/-15%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 002437112-02 / KOI

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-126 ± 38	$2.08^{+2.01}_{-1.29}$	709^{+26}_{-24}	3469^{+1568}_{-609}	231^{+1484}_{-167}
Alt.	-132 ± 40	$2.08^{+2.04}_{-1.31}$	711^{+25}_{-26}	3505^{+1557}_{-618}	243^{+1681}_{-181}

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

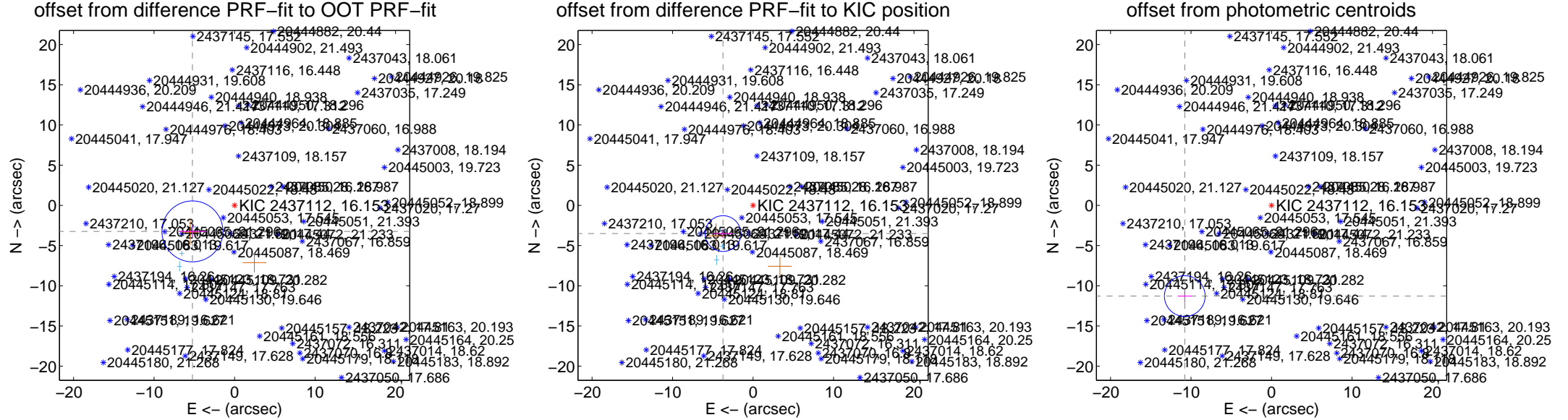
DV Centroid Data

Supplemental centroid analysis for 002437112-02. Kepler magnitude: 16.15. Transit SNR 8.56

There are 4 quarters with good PRF difference image offsets

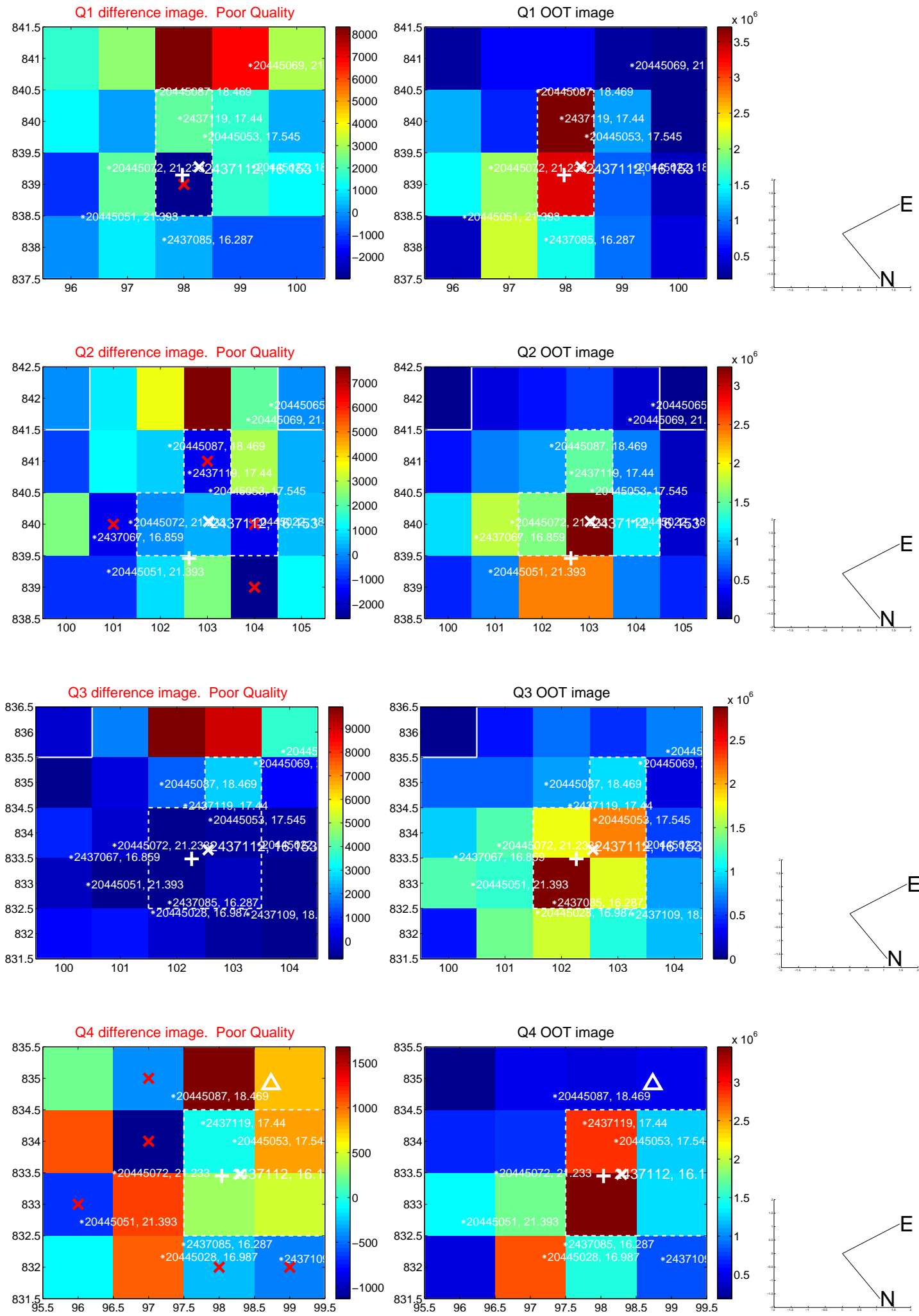
The OOT PRF centroid is offset from the target star catalog position by about 2.88 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	6.155 \pm 1.263	4.88	5.236 \pm 1.678	-3.236 \pm 0.780
PRF-fit source offset from KIC position	5.119 \pm 0.741	6.91	3.730 \pm 1.181	-3.506 \pm 0.588
photometric centroid source offset	15.60 \pm 0.84	18.50	10.78 \pm 0.88	-11.28 \pm 0.81

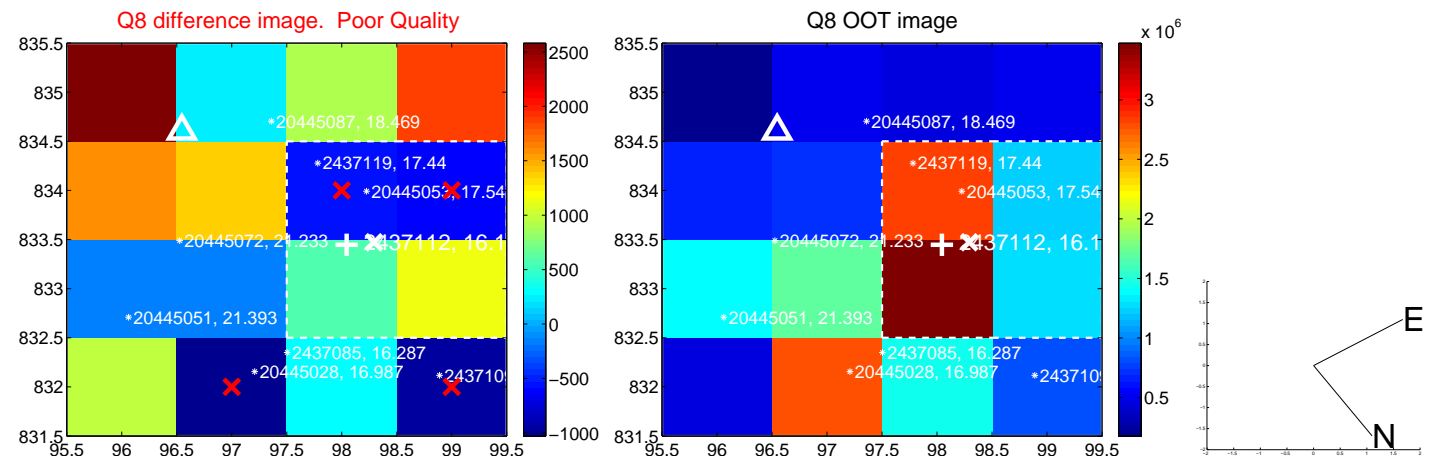
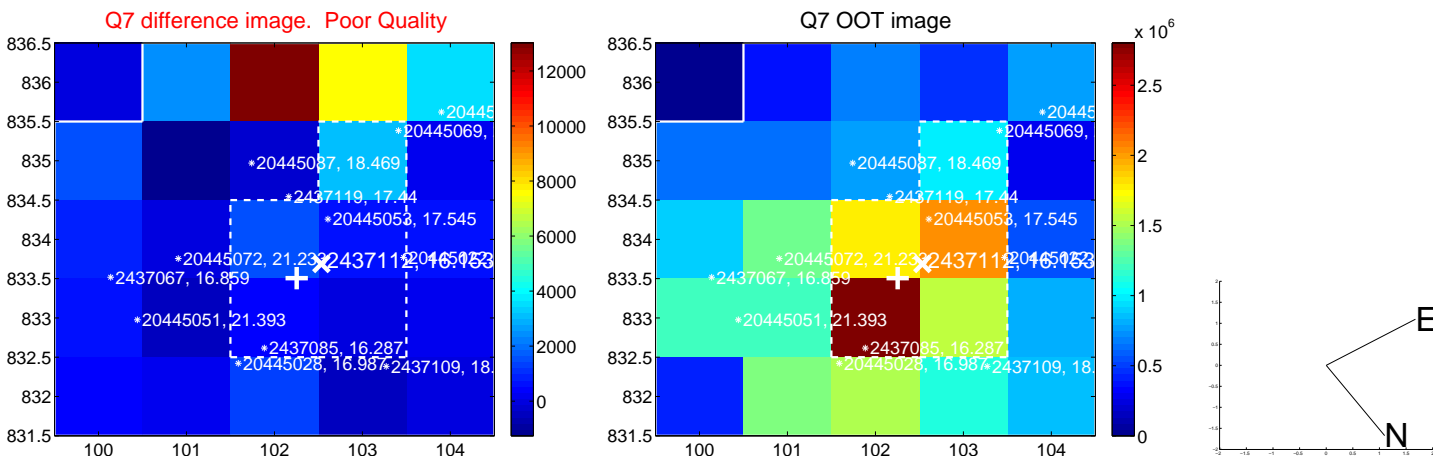
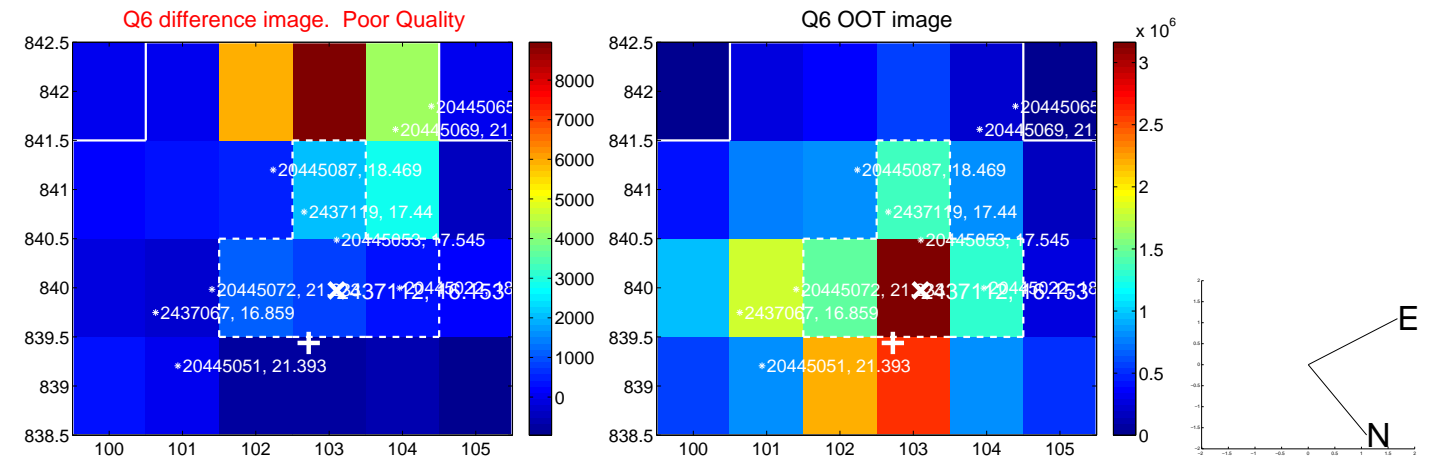
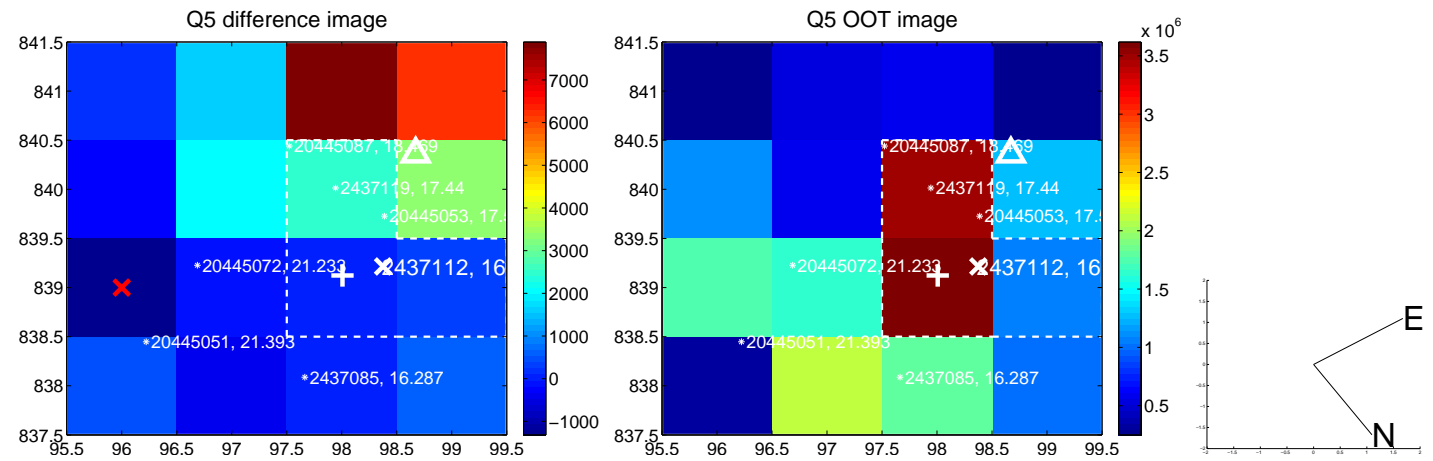


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

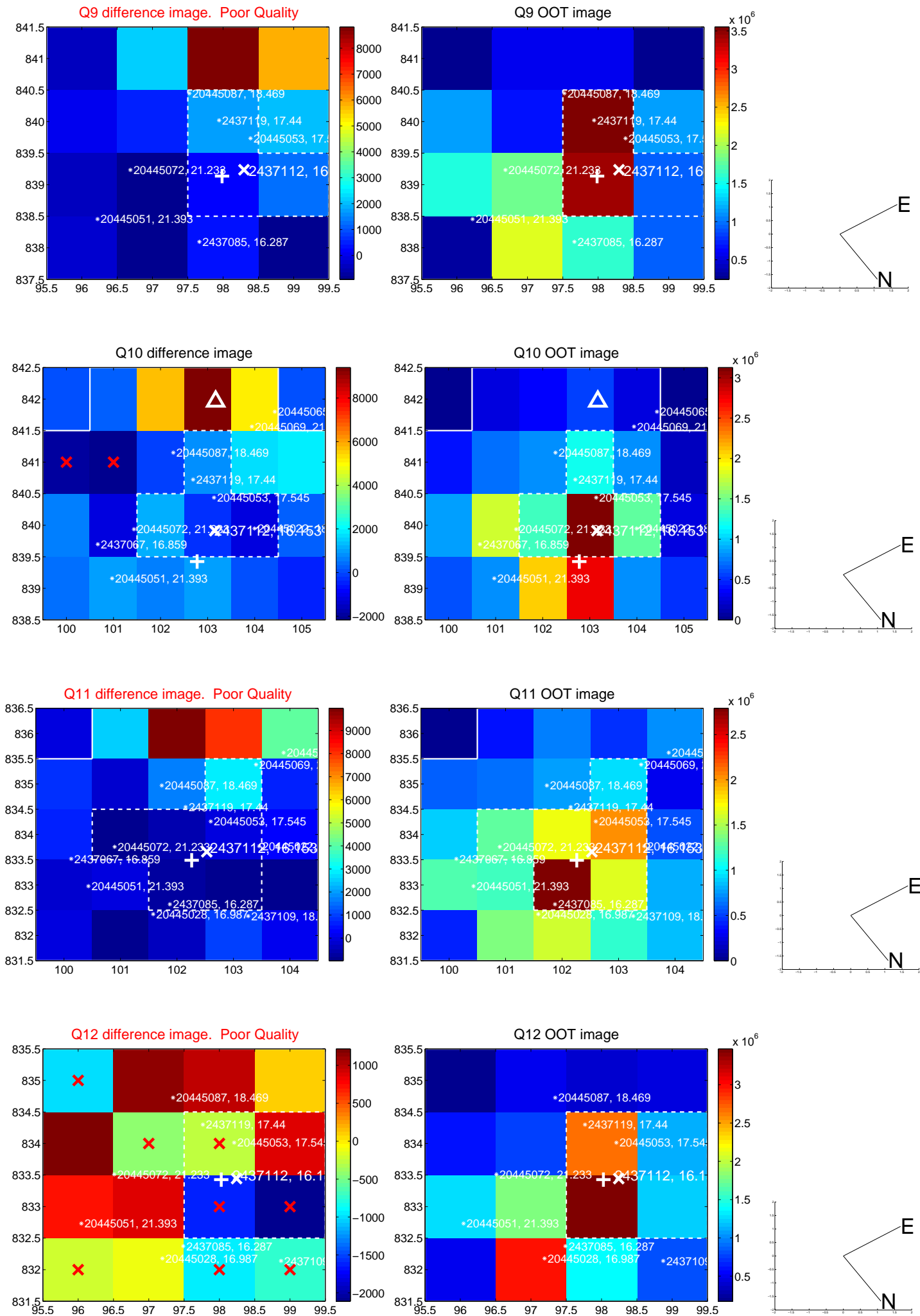
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



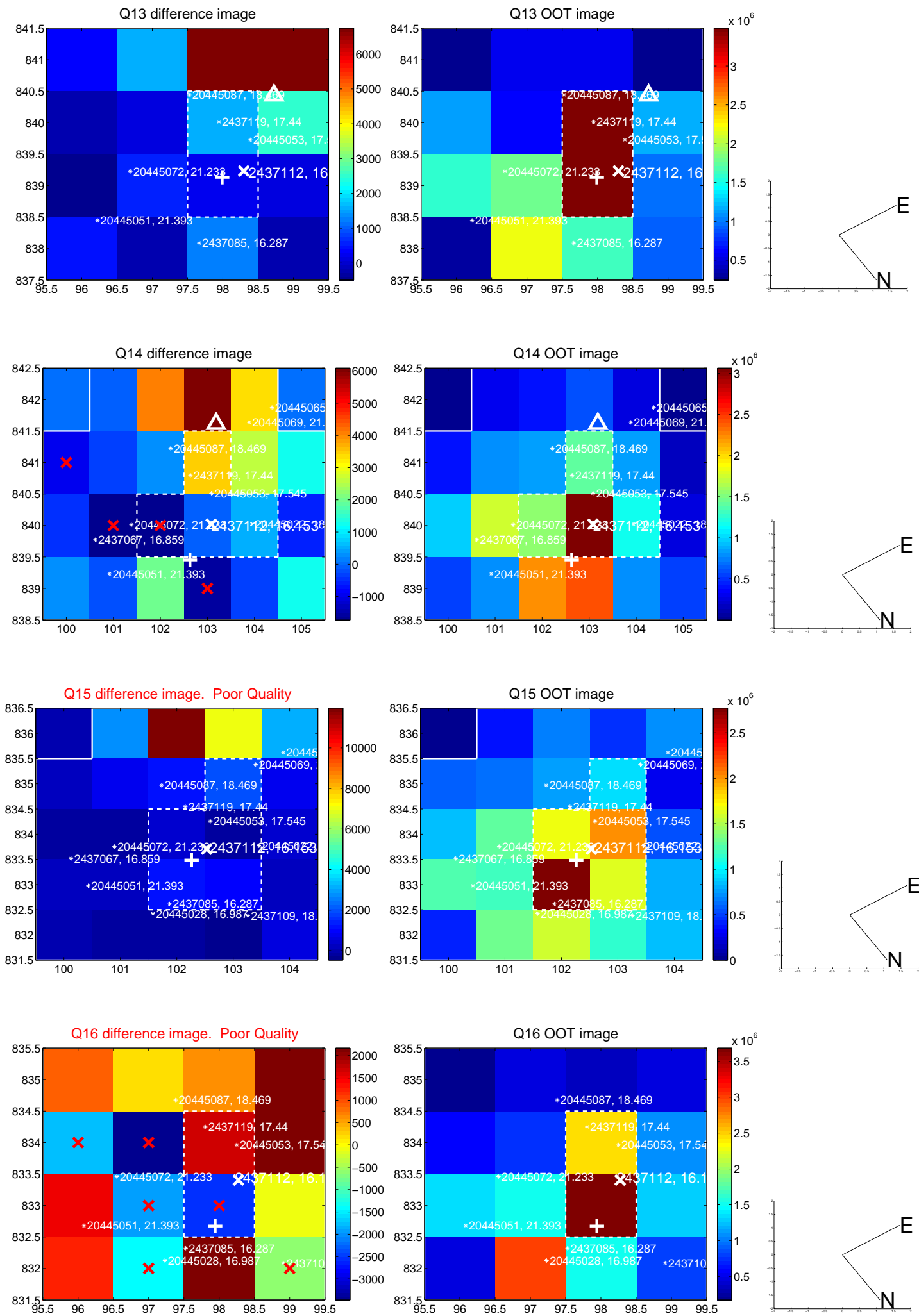
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



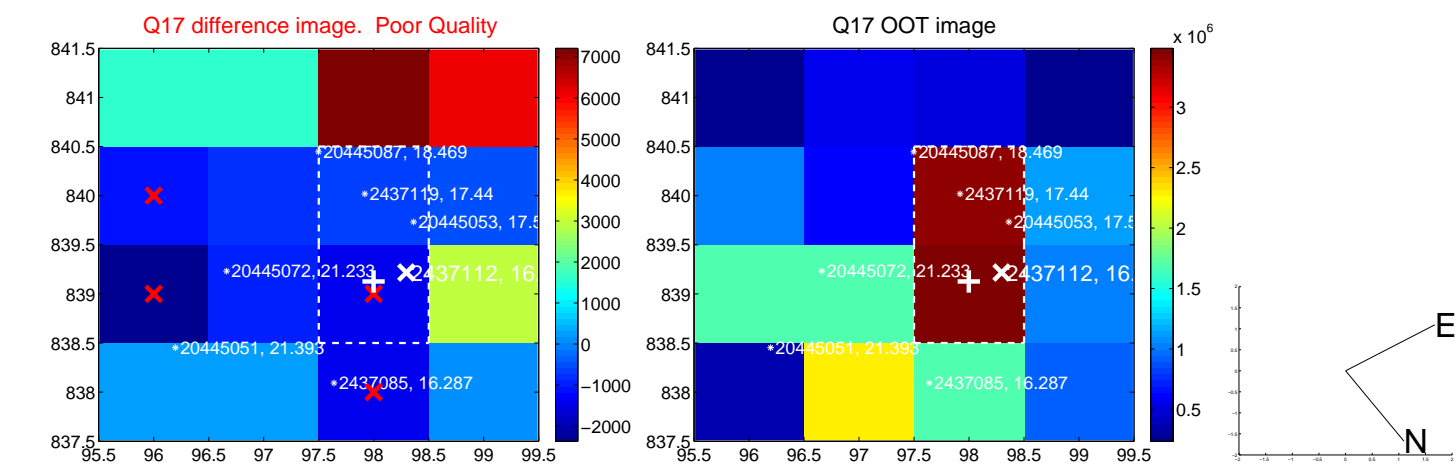
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



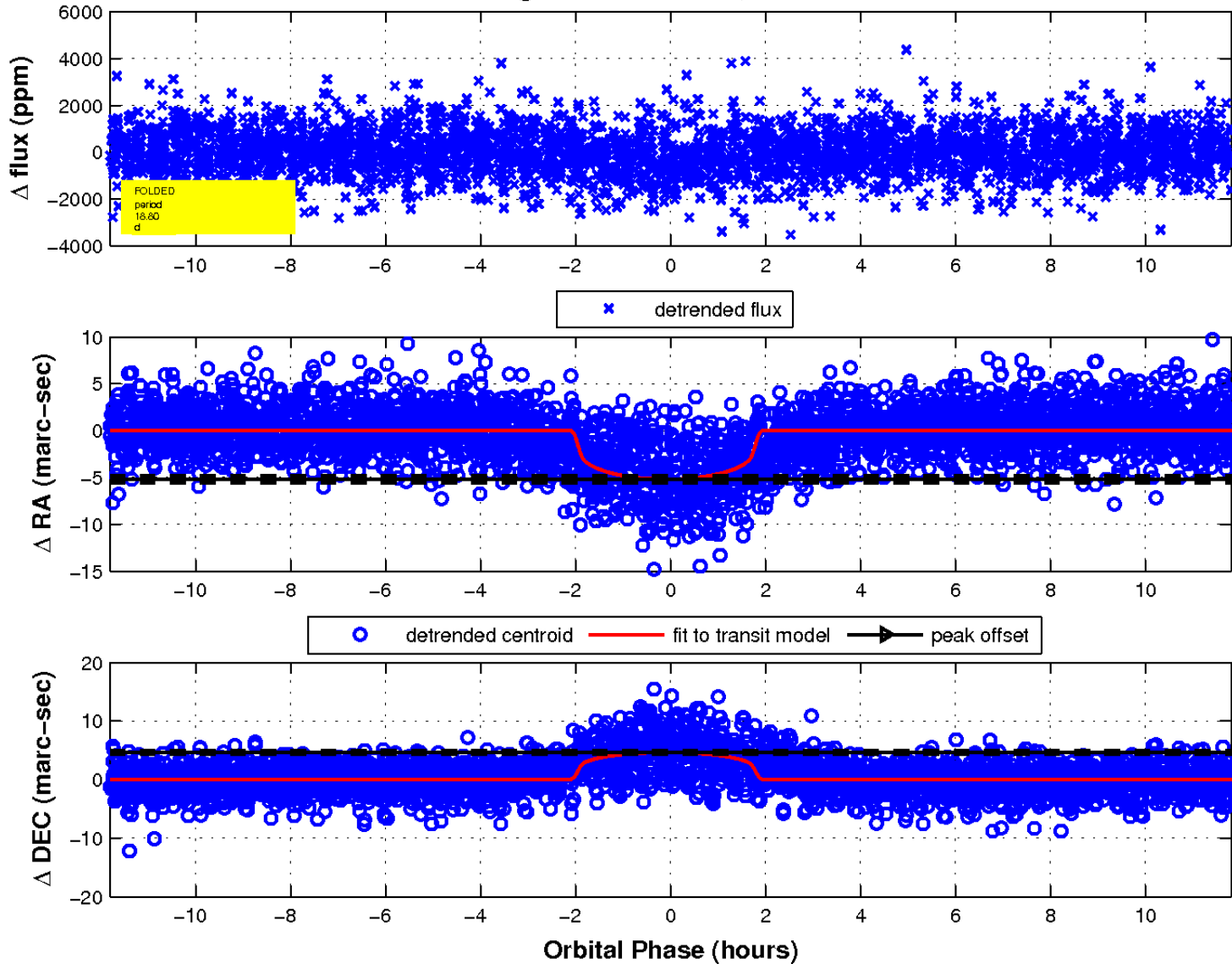
white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.

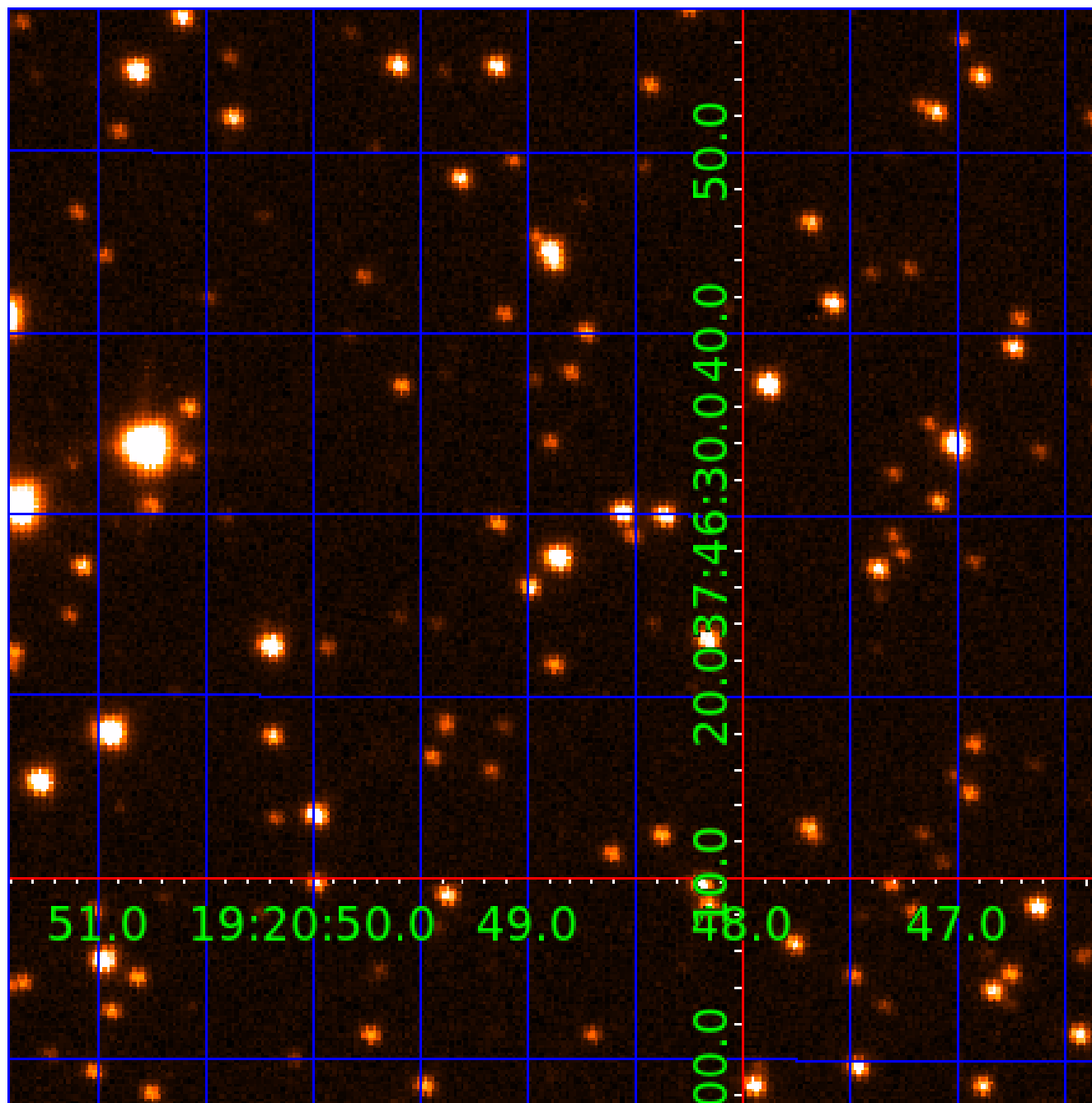


fluxWeightedCentroids, Planet 2 of 3



UKIRT Image

Declination



KIC 002437112

Q1-17 DR25 TCE Parameters

TCE	Run Type	KOI?	Period (Days)	Epoch (BKJD)	Depth (ppm)	Duration (Hours)	MES	SNR	R_{\star} (R_{\odot})	T_{\star} (K)	R_p (R_{\oplus})	S_p (S_{\oplus})
002437112-01	OBS	3461.01	18.798550	138.019582	501.3	4.906	9.5	11.0	0.71	4808	2.08	15.85
002437112-02	OBS	No	18.798463	147.229359	423.6	3.938	8.1	8.6	0.71	4808	1.60	15.85
002437112-03	OBS	3461.02	3.187401	132.805503	131.4	6.542	7.7	8.4	0.71	4808	0.84	168.93

Robovetter Results

TCE	Run Type	Disp	Score	N	S	C	E	Comments
002437112-01	OBS	FP	0.00	0	1	1	1	MOD_SEC_DV—MOD_SEC_ALT—HAS_SEC_TCE—CENT_RESOLVED_OFFSET—HALO_GHOST—EPHEM_MATCH
002437112-02	OBS	FP	0.00	1	1	1	1	IS_SEC_TCE—CENT_RESOLVED_OFFSET—EPHEM_MATCH
002437112-03	OBS	FP	0.00	1	0	1	0	LPP_DV—CENT_RESOLVED_OFFSET

Notes: OBS = Observed. INJ = Injected. INV = Inverted. SCR = Scrambled.

N = Not Transit-Like. S = Stellar Eclipse. C = Centroid Offset. E = Ephemeris Match.

See http://exoplanetarchive.ipac.caltech.edu/docs/API_kepcandidate_columns.html#proj_disp_col for comment definitions.

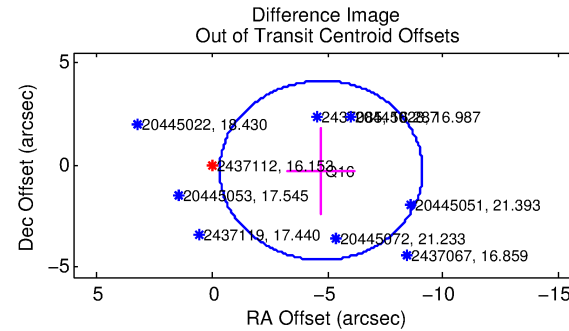
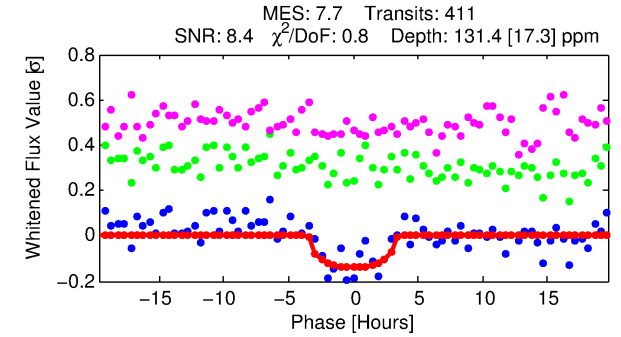
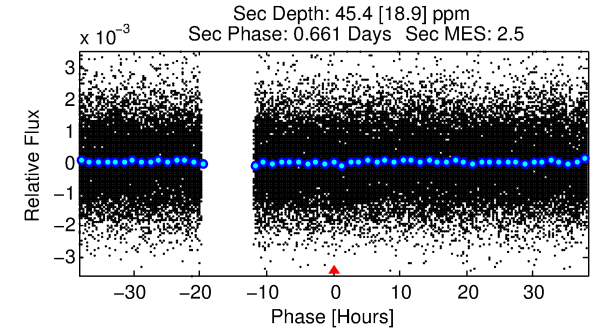
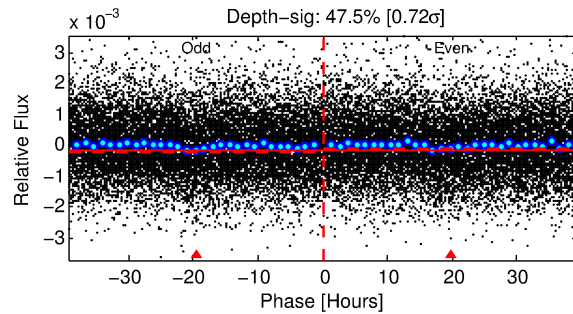
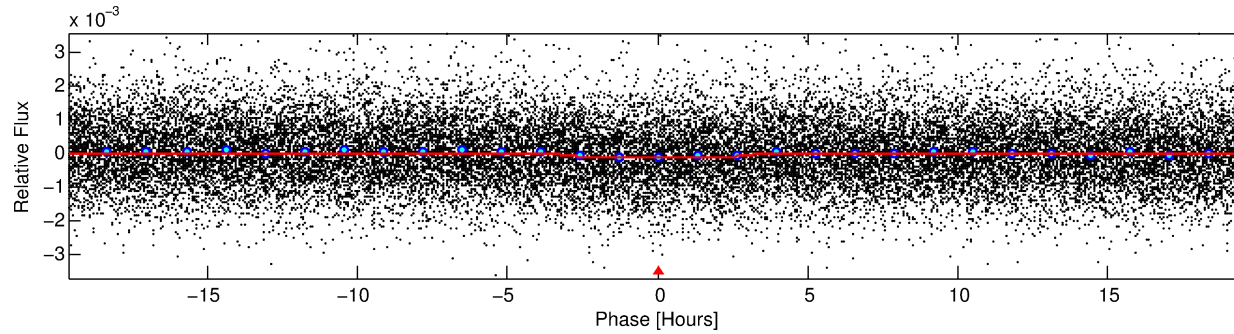
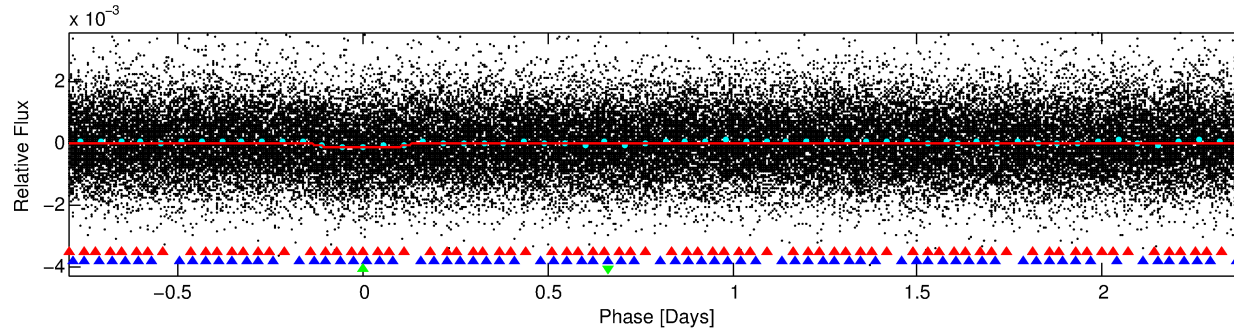
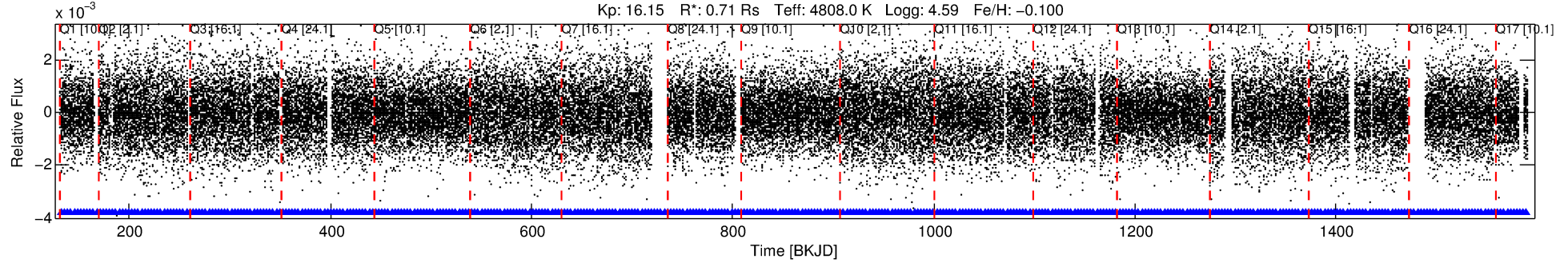
Ephemeris Match Information For 002437112-03

No Significant Match Found

DV One-Page Summary

KIC: 2437112 Candidate: 3 of 3 Period: 3.187 d
KOI: K03461 Corr: No Ephemeris Match

Kp: 16.15 R*: 0.71 Rs Teff: 4808.0 K Logg: 4.59 Fe/H: -0.100



DV Fit Results:

Period = 3.18740 [0.00005] d
Epoch = 132.8055 [0.0113] BKJD
Rp/R* = 0.0107 [0.0141]
a/R* = 3.19 [12.40]
b = 0.57 [5.18]
Seff = 168.93 [25.55]
Teq = 919 [35] K
Rp = 0.84 [1.11] Re
a = 0.0381 [0.0026] AU
Ag = 51.48 [137.30] [0.37σ]
Teffp = 3807 [2540] K [1.14σ]

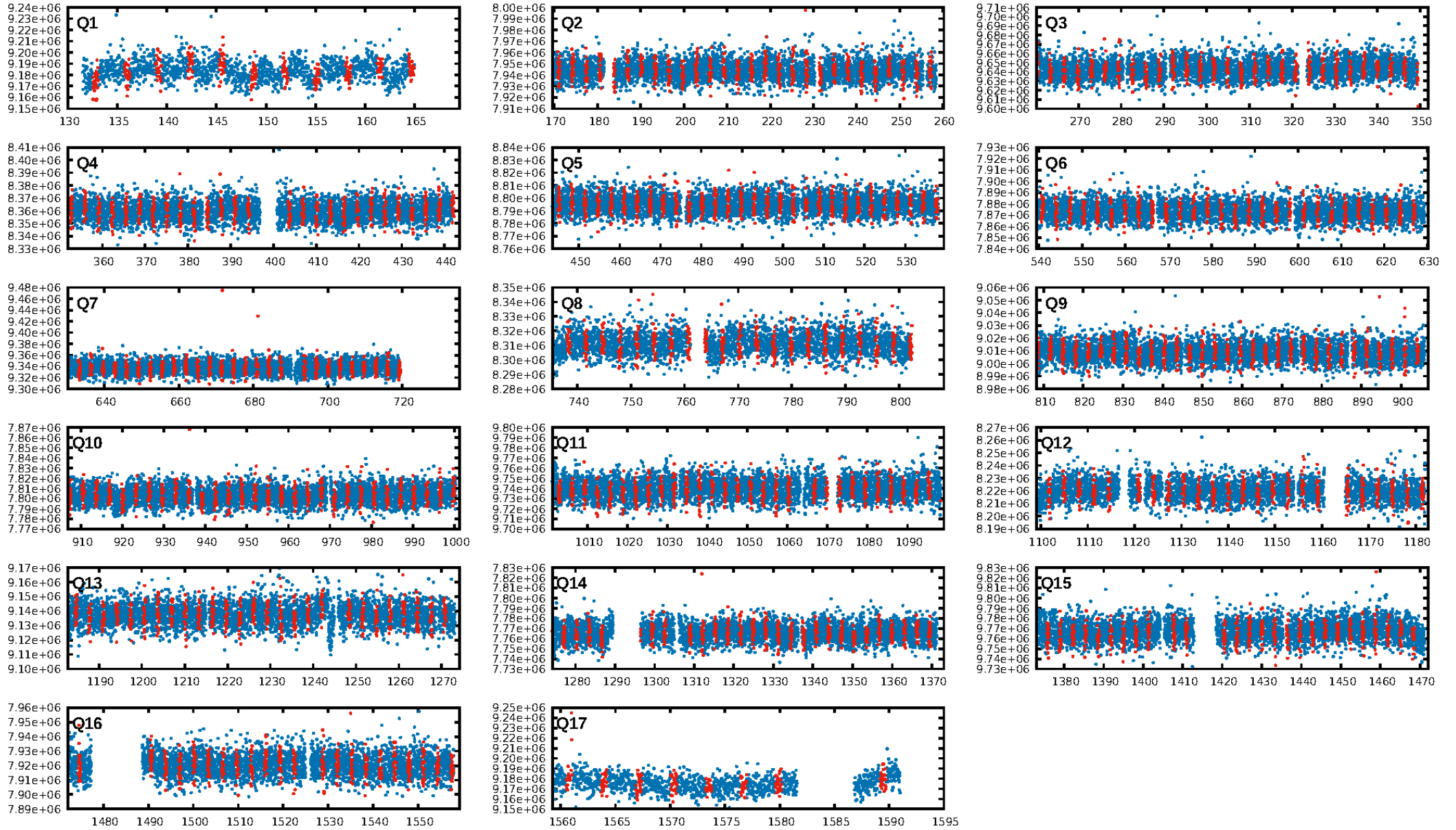
DV Diagnostic Results:

ShortPeriod-sig: N/A
LongPeriod-sig: 100.0% [49.07σ]
ModelChiSquare2-sig: N/A
ModelChiSquareGof-sig: N/A
Bootstrap-pfa: 7.18e-14
RollingBand-fgt: 1.00 [392/392]
GhostDiagnostic-chr: -0.8211
Centroid-sig: 0.0%
Centroid-so: 7.216 arcsec [8.43σ]
OotOffset-rm: 4.737 arcsec [3.24σ]
KicOffset-rm: 7.476 arcsec [5.06σ]
OotOffset-st: 0/0/1/0 [1]
KicOffset-st: 0/0/1/0 [1]
DiffImageQuality-fgm: 0.00 [0/1]
DiffImageOverlap-fno: 1.00 [17/17]

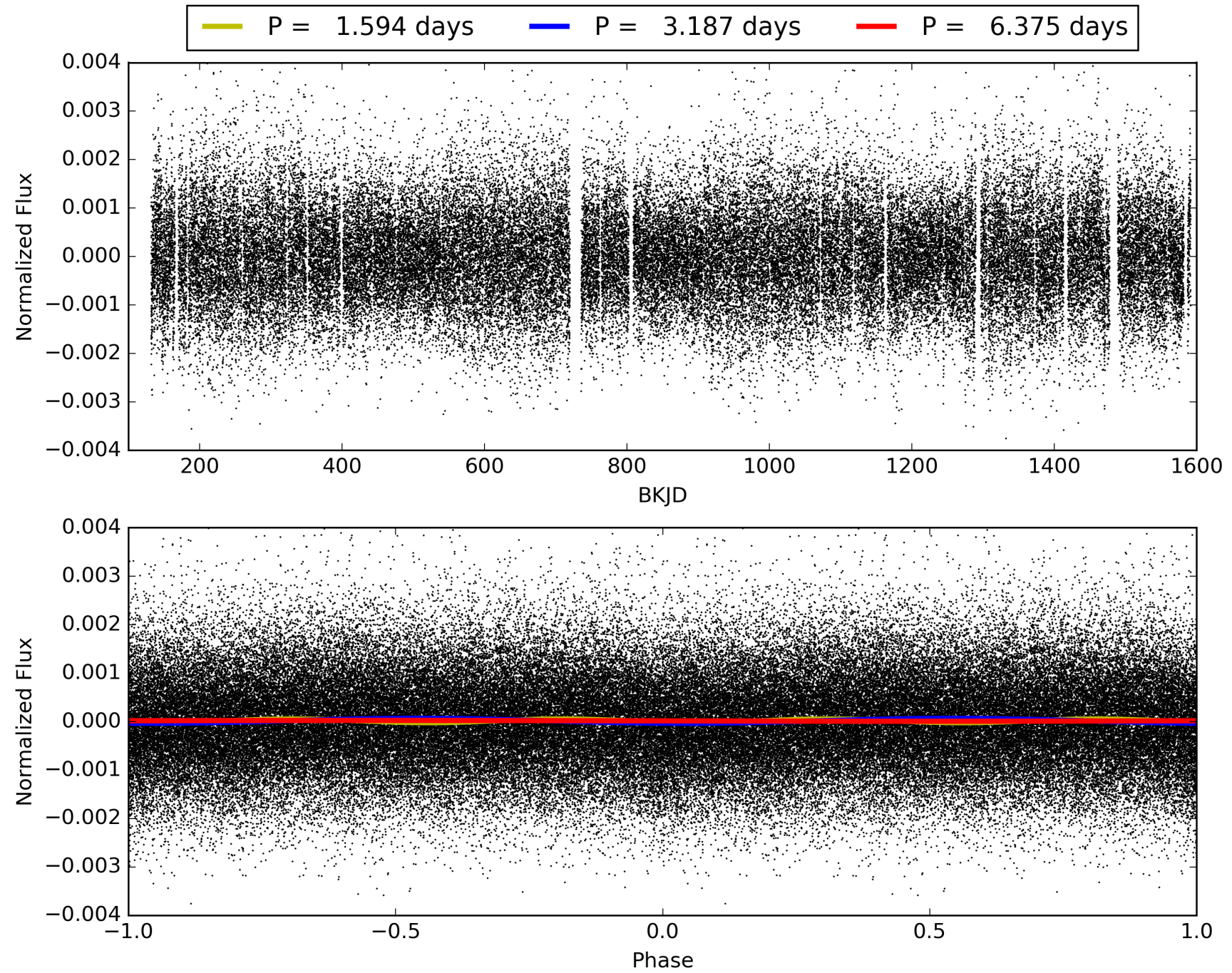
Software Revision: svn+ssh://murzim/repo/soc/tags/release/9.3.42@60958 -- Date Generated: 31-Jan-2016 00:29:07 Z

This Data Validation Report Summary was produced in the Kepler Science Operations Center Pipeline at NASA Ames Research Center

TCE 002437112-03, PDC Light Curves

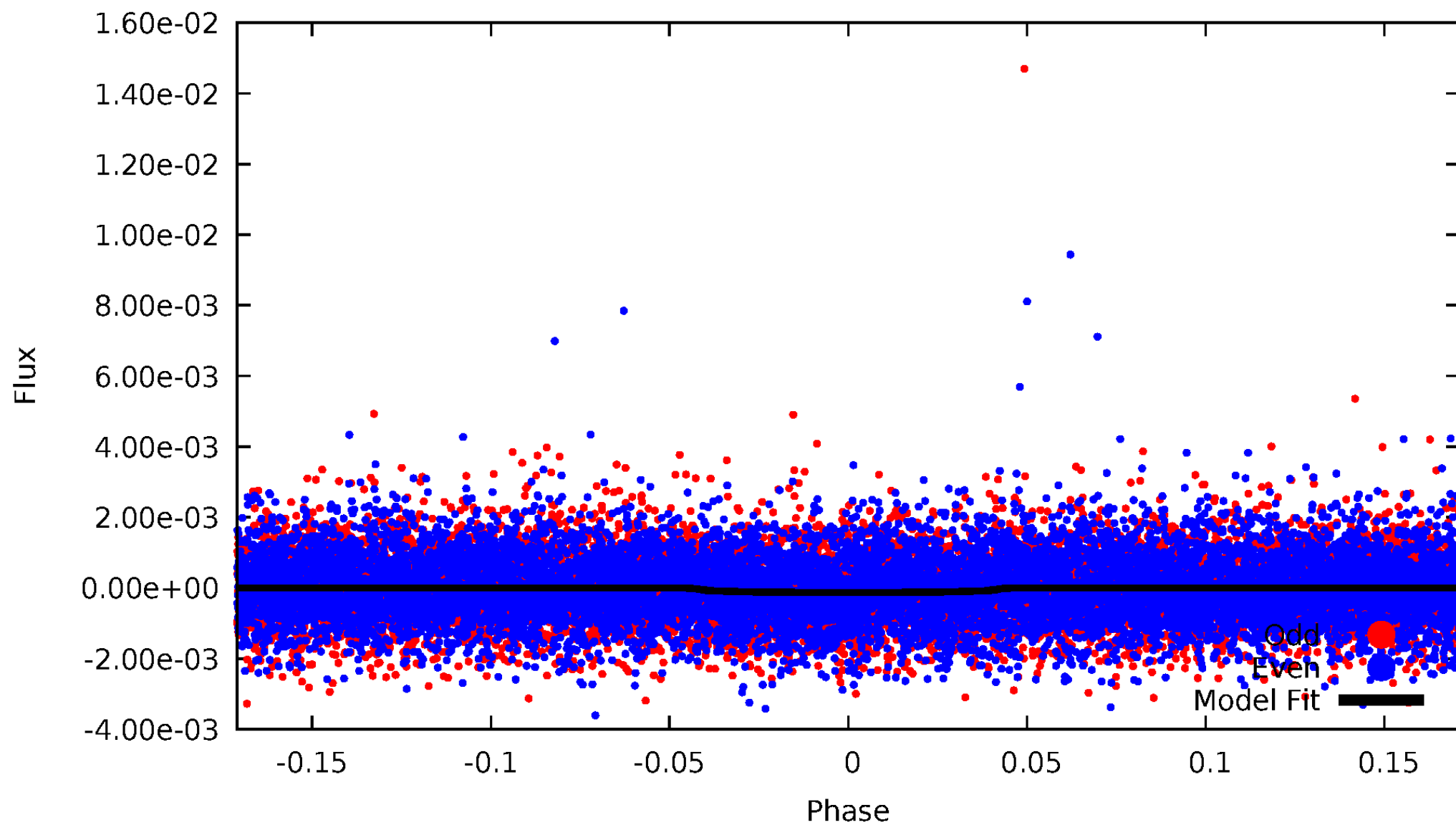


TCE 002437112-03



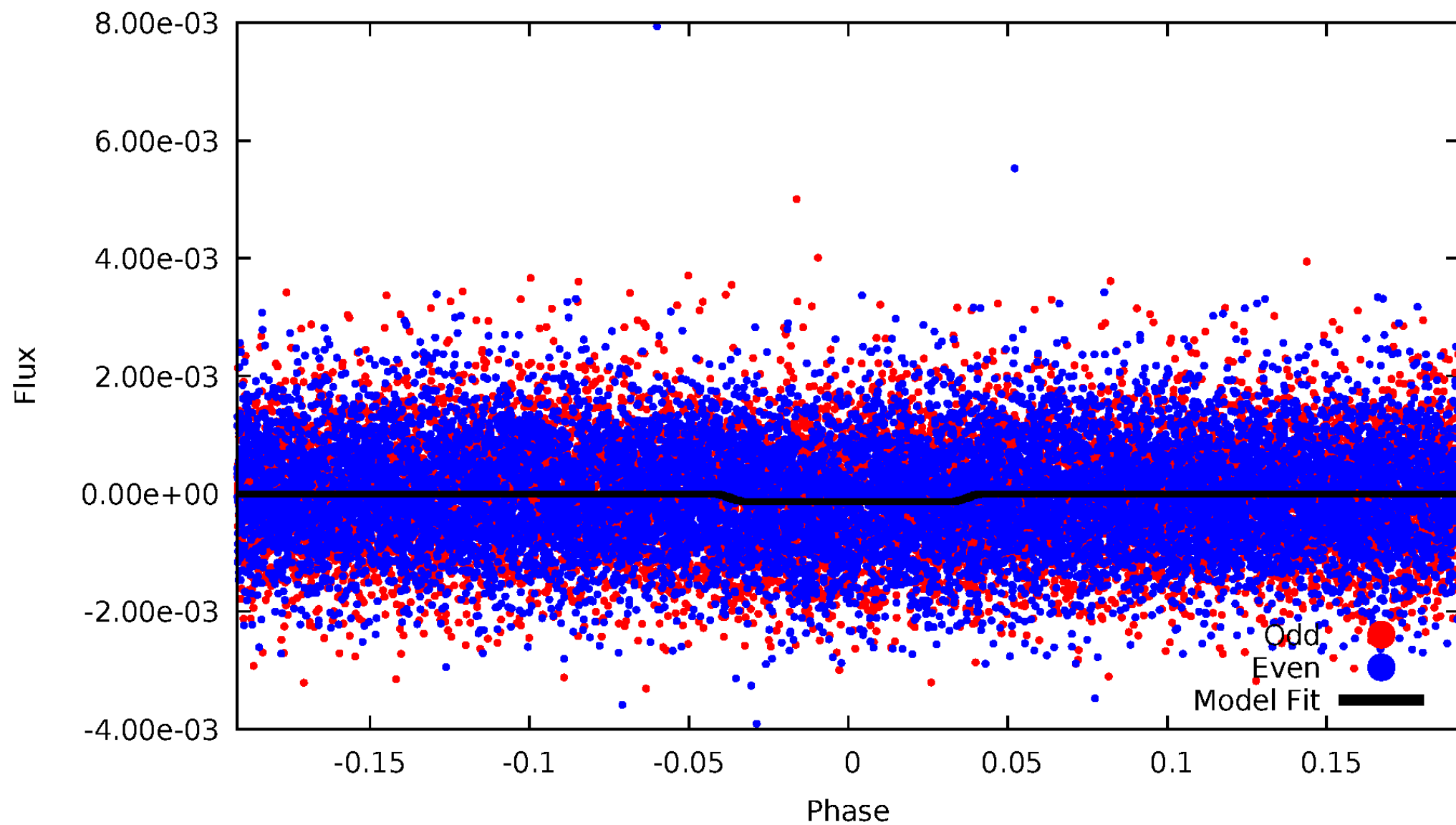
DV Odd/Even

TCE 002437112-03



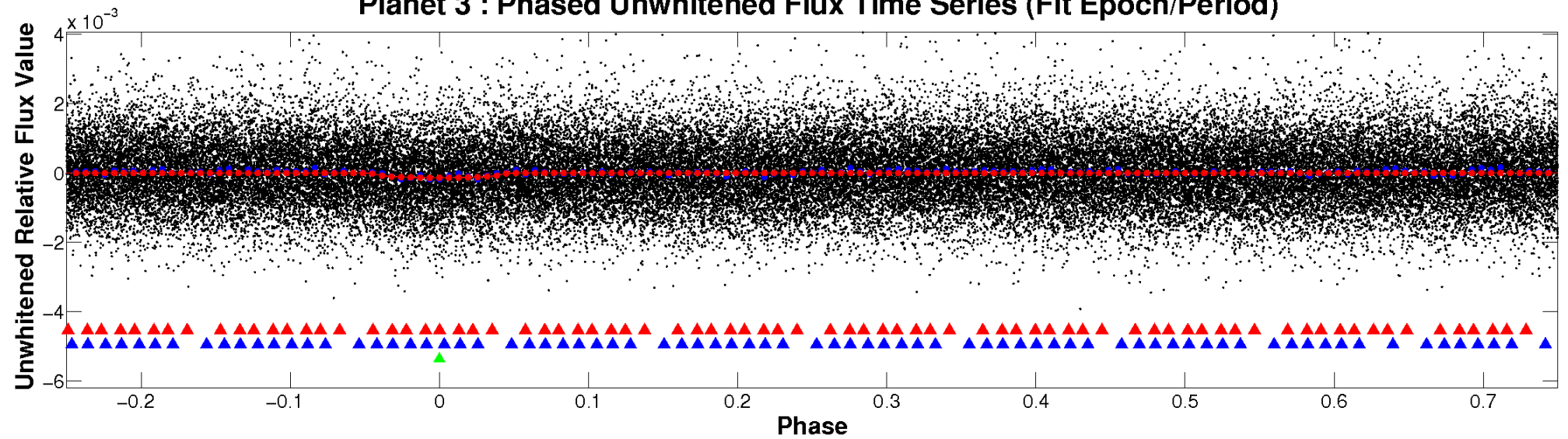
ALT Odd/Even

TCE 002437112-03

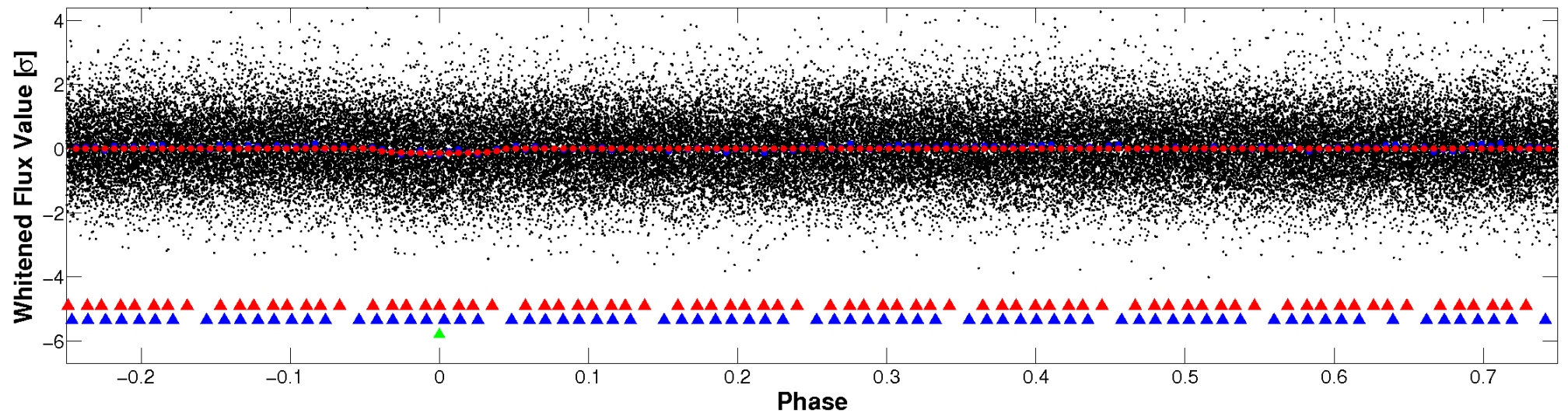


Non-Whitened Vs. Whitened Light Curve

Planet 3 : Phased Unwhitened Flux Time Series (Fit Epoch/Period)

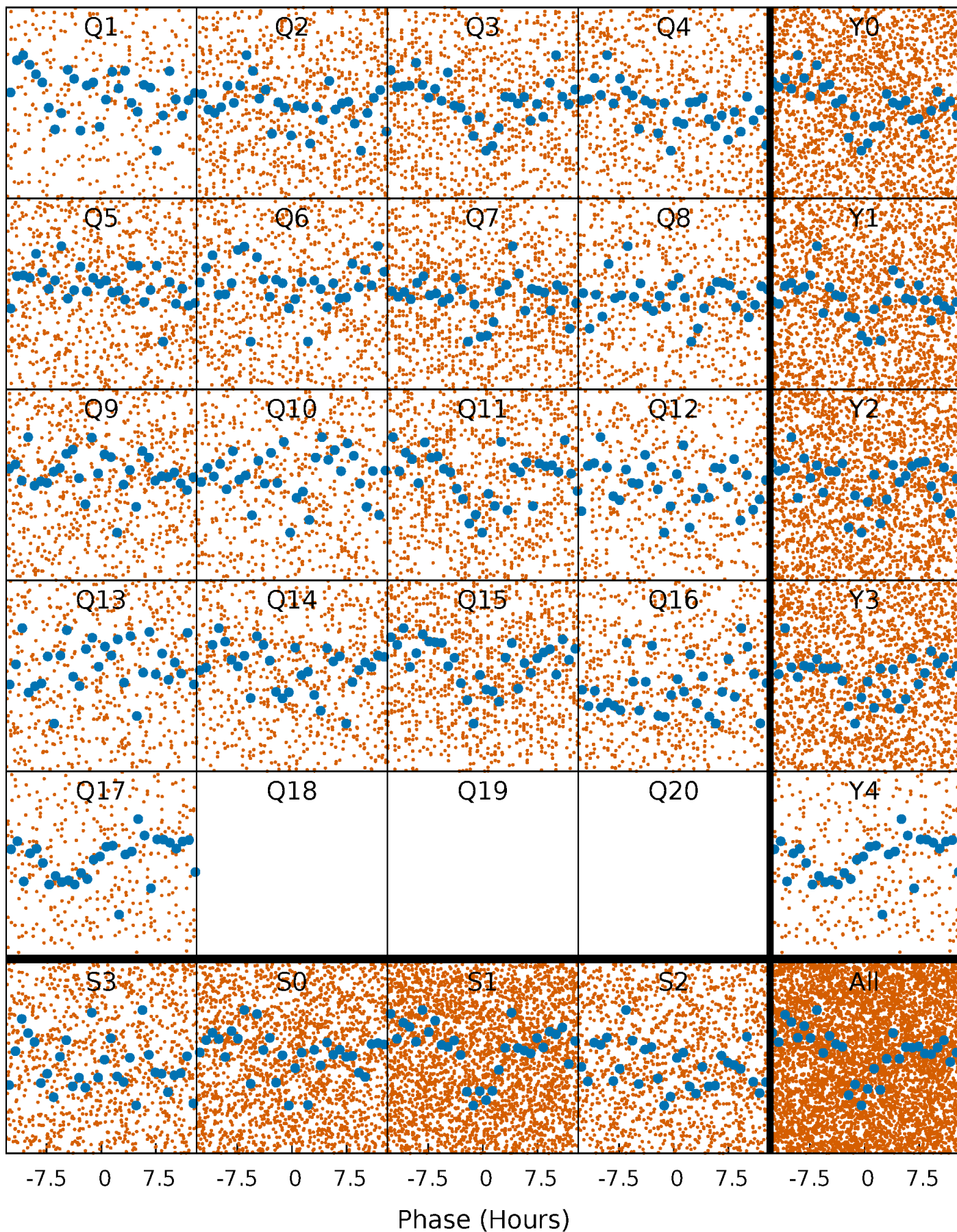


Planet 3 : Phased Whitened Flux Time Series (Fit Epoch/Period)



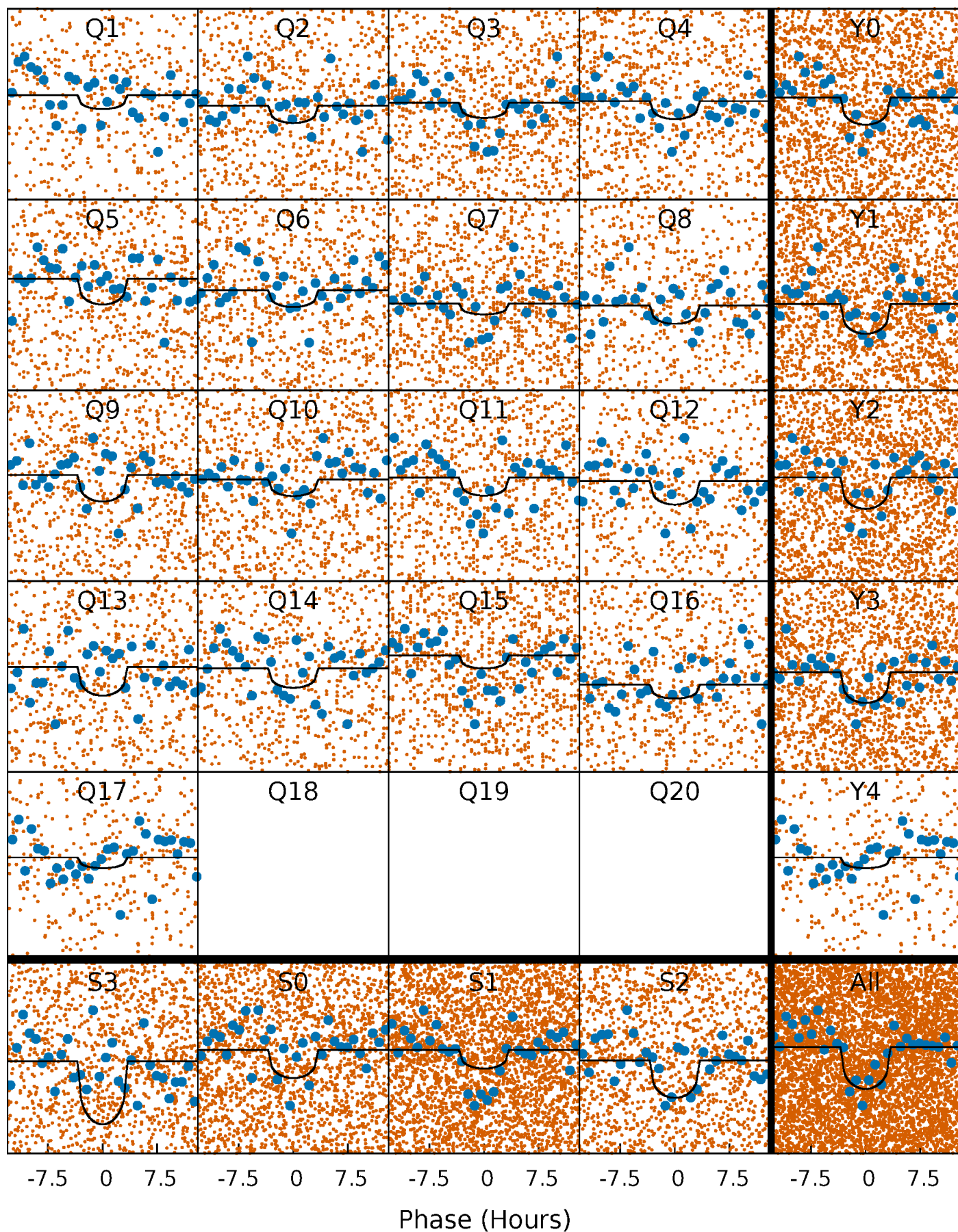
PDC Quarter-Phased Transit Curves

TCE 002437112-03 P= 3.187401 Days $T_0=132.805503$ (BKJD)



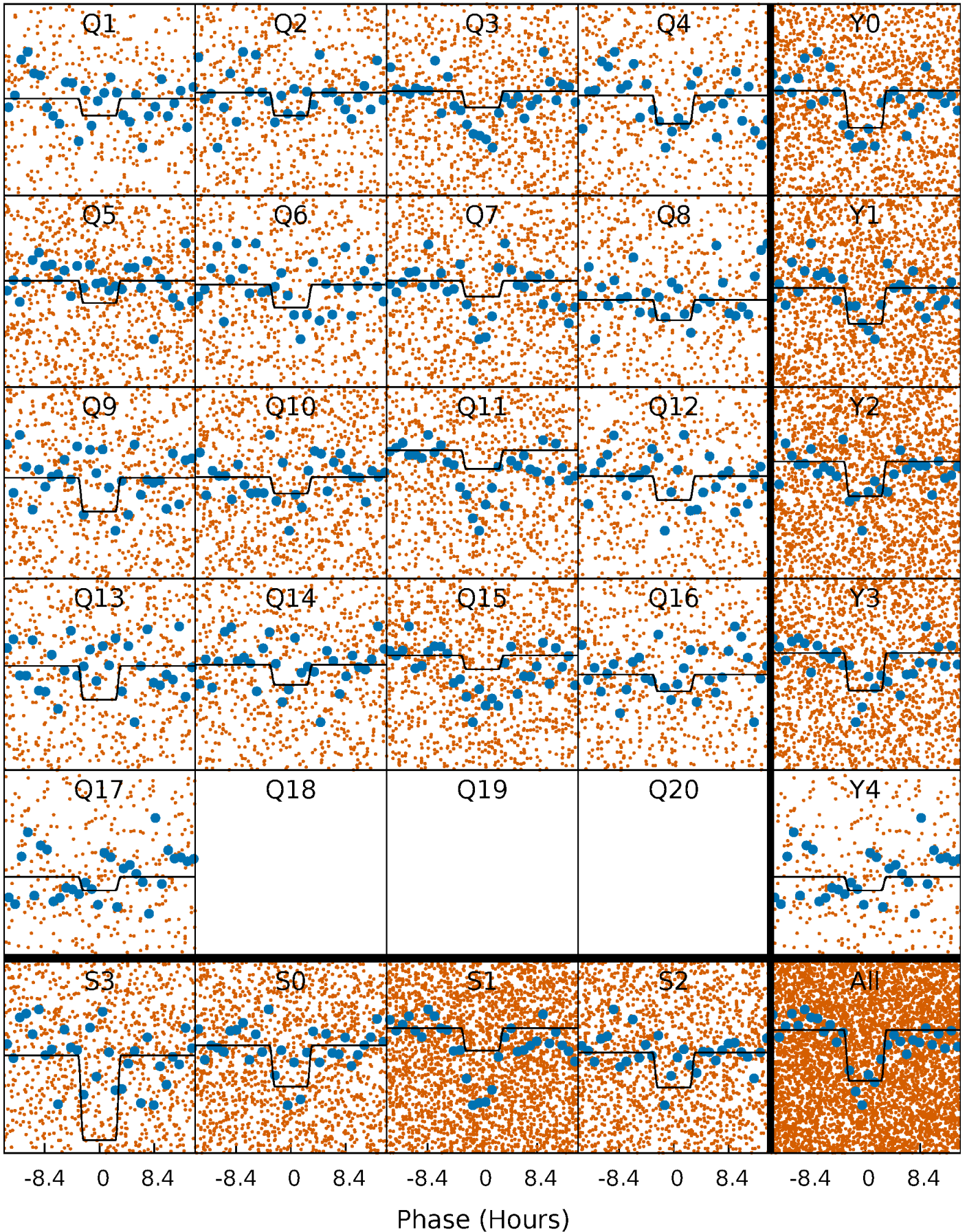
DV Quarter-Phased Transit Curves

TCE 002437112-03 P= 3.187401 Days $T_0=132.805503$ (BKJD)



Alt. Detrend Quarter-Phased Transit Curves

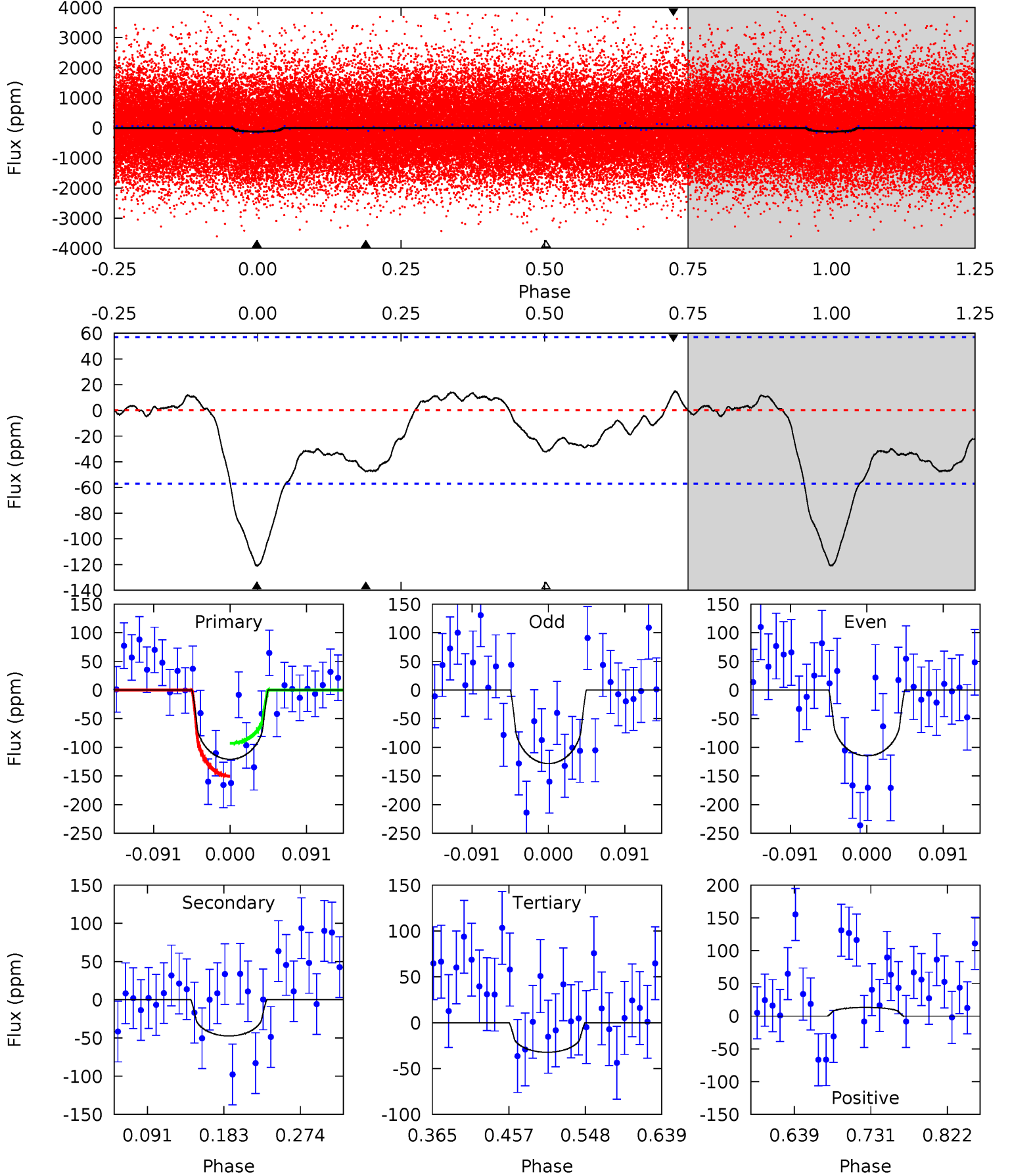
TCE 002437112-03 P= 3.187312 Days $T_0=132.829138$ (BKJD)



DV Model-Shift Uniqueness Test

002437112-03, P = 3.187401 Days, E = 129.618102 Days

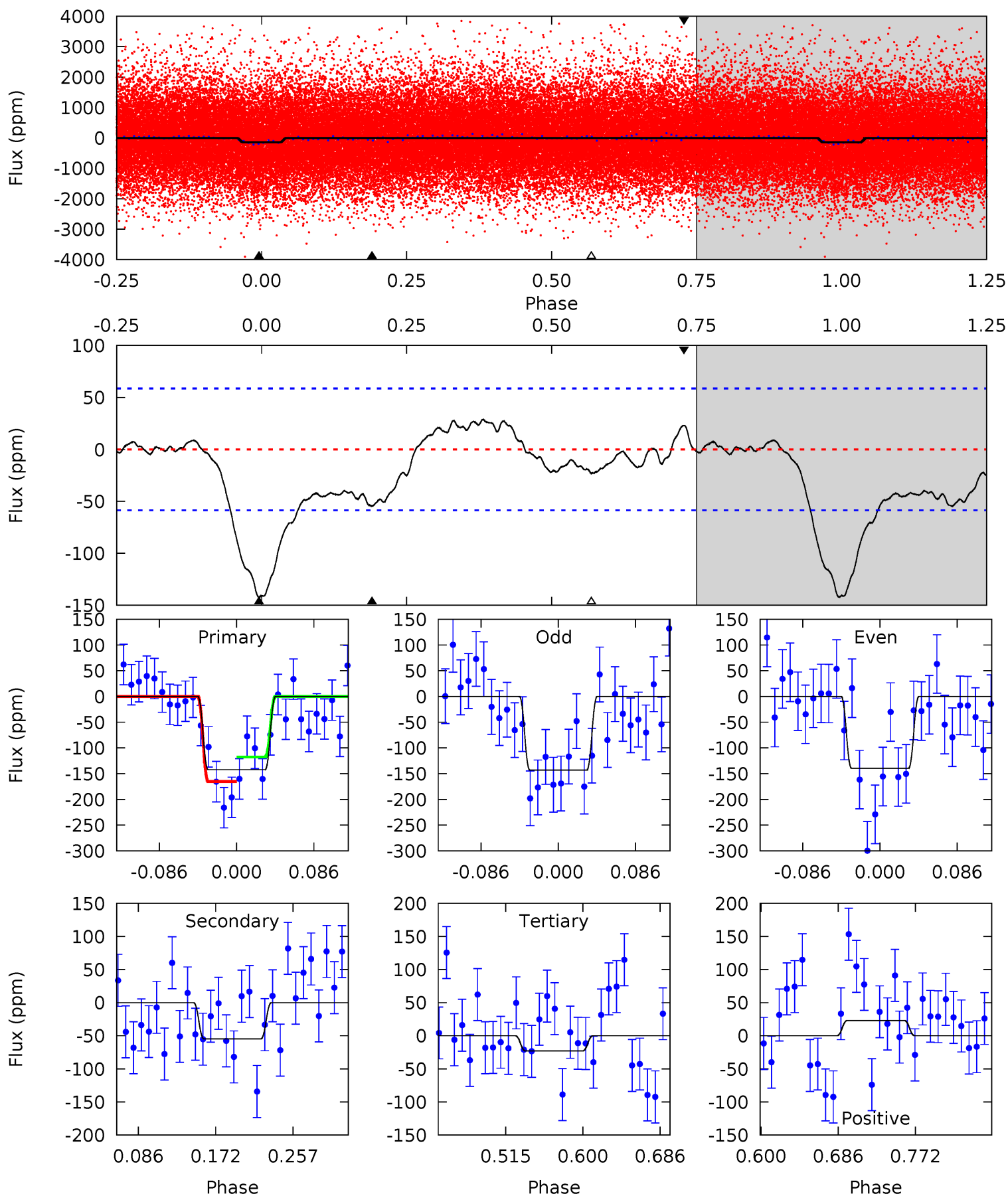
Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
9.72	3.81	2.60	1.07	4.58	1.69	1.13	7.12	8.65	1.22	2.74	0.54	0.95	0.11	2.31



Alt Model-Shift Uniqueness Test

002437112-03, P = 3.187312 Days, E = 129.641826 Days

Pri	Sec	Ter	Pos	FA ₁	FA ₂	F _{Red}	Pri-Ter	Pri-Pos	Sec-Ter	Sec-Pos	Odd-Evn	DMM	Shape	TAT
11.2	4.29	1.81	1.80	4.60	1.72	1.31	9.35	9.36	2.48	2.48	0.13	1.00	0.17	1.87



Stellar Parameters For KIC 002437112

	$T_{\text{eff}}(K)$	$\log(g)$	[Fe/H]	$R (R_{\odot})$	$M(M_{\odot})$	$p_{\star} (\text{g}\cdot\text{cm}^{-3})$
	4808^{+146}_{-146}	$4.589^{+0.045}_{-0.041}$	$-0.100^{+0.300}_{-0.300}$	$0.715^{+0.062}_{-0.062}$	$0.723^{+0.075}_{-0.061}$	$2.789^{+0.623}_{-0.423}$
	+3%/-3%	+1%/-1%	+300%/-300%	+9%/-9%	+10%/-8%	+22%/-15%
Source	PHO1	KIC0	KIC0	DSEP		

KIC = Kepler Input Catalog; PHO = Photometry; SPE = Spectroscopy; AST = Asteroseismology
 TRA = Transits; DESP = Dartmouth Models; MULT = Multiple Models

Secondary Eclipse Parameters for KIC 002437112-03 / KOI 3461.02

Detrend	Depth (ppm)	$R_p (R_{\oplus})$	$T_{max} (K)$	$T_{obs} (K)$	A_{obs}
DV	-47 ± 12	$1.10^{+0.96}_{-0.70}$	1285^{+44}_{-48}	3685^{+1676}_{-691}	31^{+186}_{-23}
Alt.	-55 ± 13	$1.18^{+1.04}_{-0.79}$	1284^{+46}_{-45}	3654^{+2034}_{-617}	30^{+252}_{-21}

T_{max} = Theoretical Maximum Planetary Temperature

T_{obs} = Observed Planetary Temperature (Assuming $A=0.3$)

A_{obs} = Observed Albedo (Assuming $T=0$)

If a secondary eclipse is present, the system is likely an EB if $T_{obs} \gg T_{max}$ AND $A_{obs} \gg 1.0$

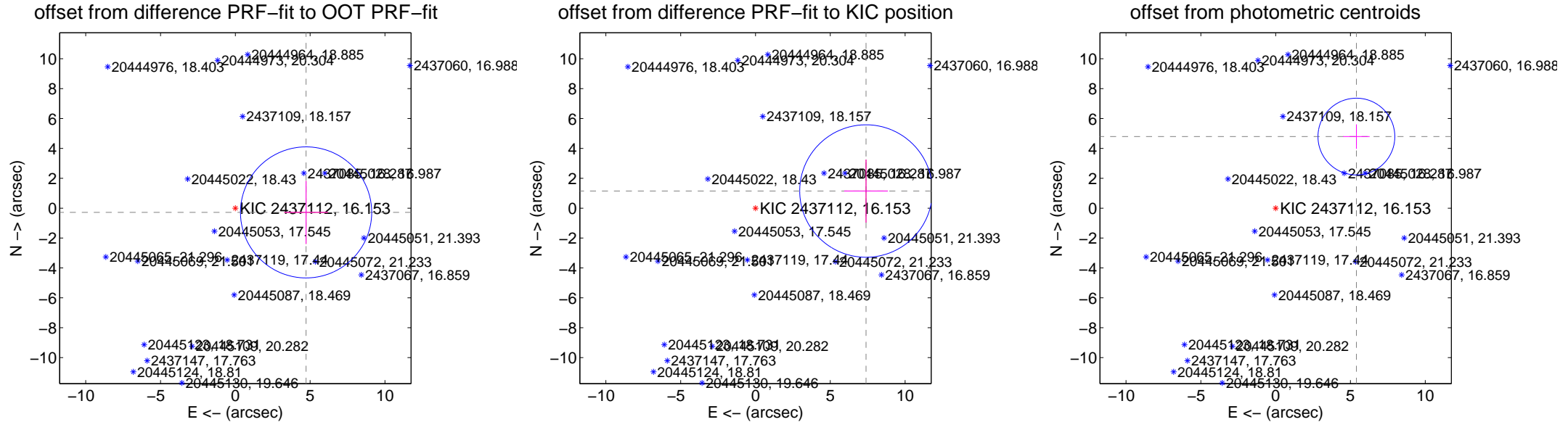
DV Centroid Data

Supplemental centroid analysis for 002437112-03. Kepler magnitude: 16.15. Transit SNR 8.38

There are 0 quarters with good PRF difference image offsets

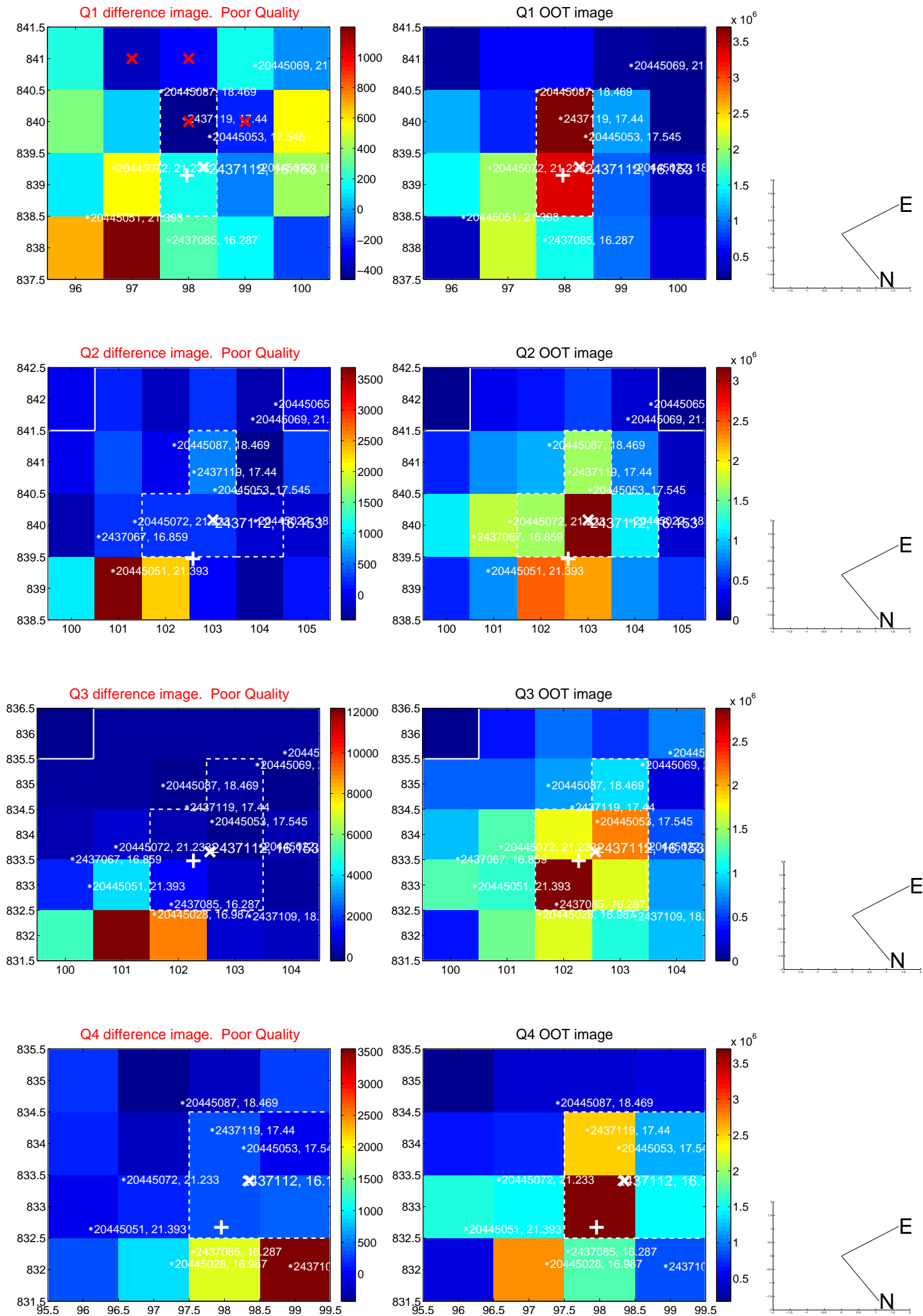
The OOT PRF centroid is offset from the target star catalog position by about 3.02 arcsec so the offset from difference PRF-fit to OOT-fit may be invalid.

	Distance in arcsec	Distance / σ	Δ RA	Δ Dec
PRF-fit source offset from OOT	4.737 ± 1.462	3.24	-4.728 ± 1.459	-0.283 ± 2.109
PRF-fit source offset from KIC position	7.476 ± 1.477	5.06	-7.388 ± 1.459	1.147 ± 2.109
photometric centroid source offset	7.22 ± 0.86	8.43	-5.40 ± 0.88	4.79 ± 0.82

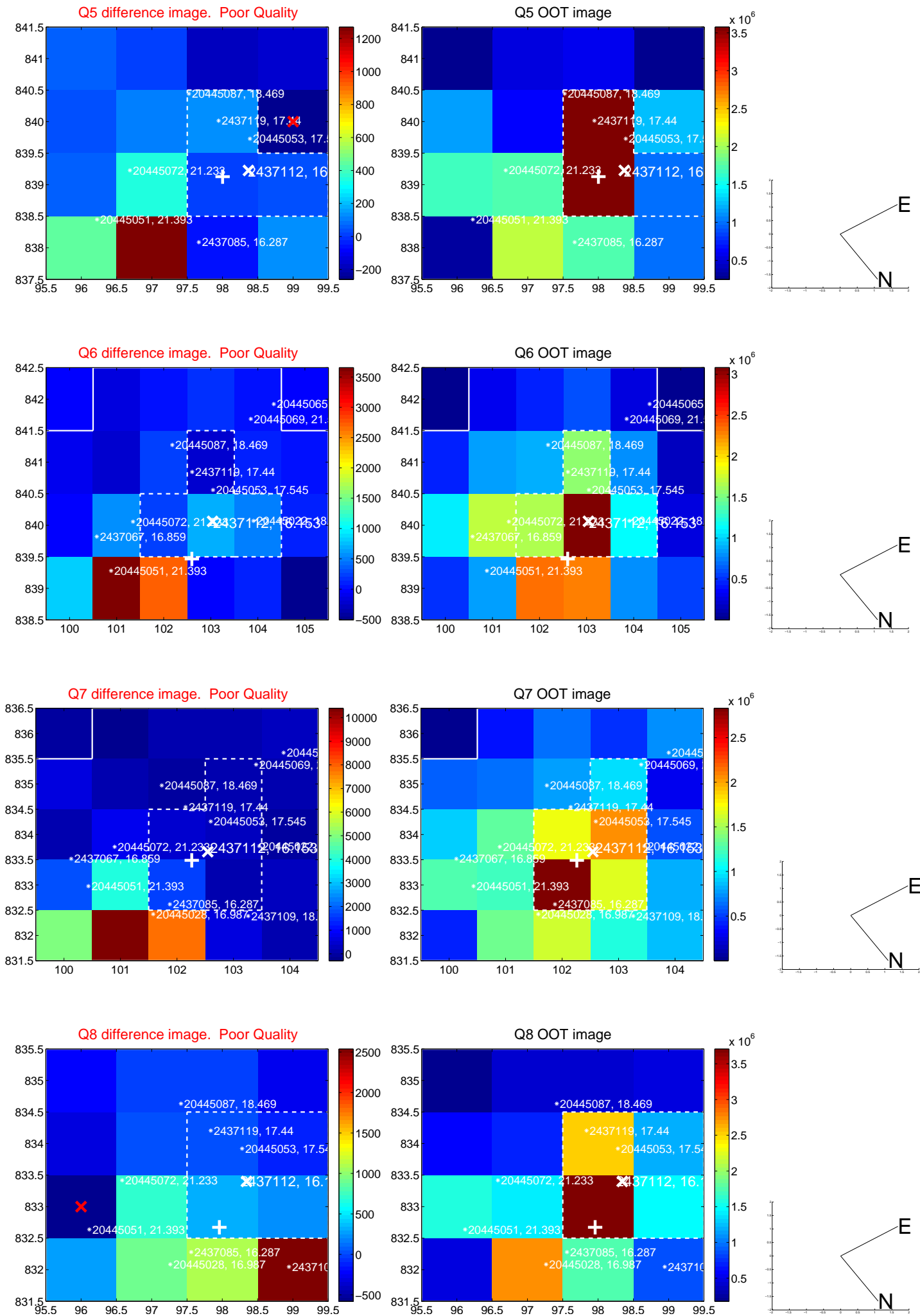


Centroid source offsets from the target star reconstructed from PRF and photometric centroids. Sky blue crosses: good quarterly centroid offsets; Vermillion crosses: bad quarterly centroid offsets; magenta cross: average over quarters. Length of the crosses: one- σ uncertainty. Blue circle: three- σ . Red *: target star. Blue *: Other stars. Text next to a star gives its KIC ID and kepmag. KIC IDs > 15,000,000 are from the UKIRT catalog.

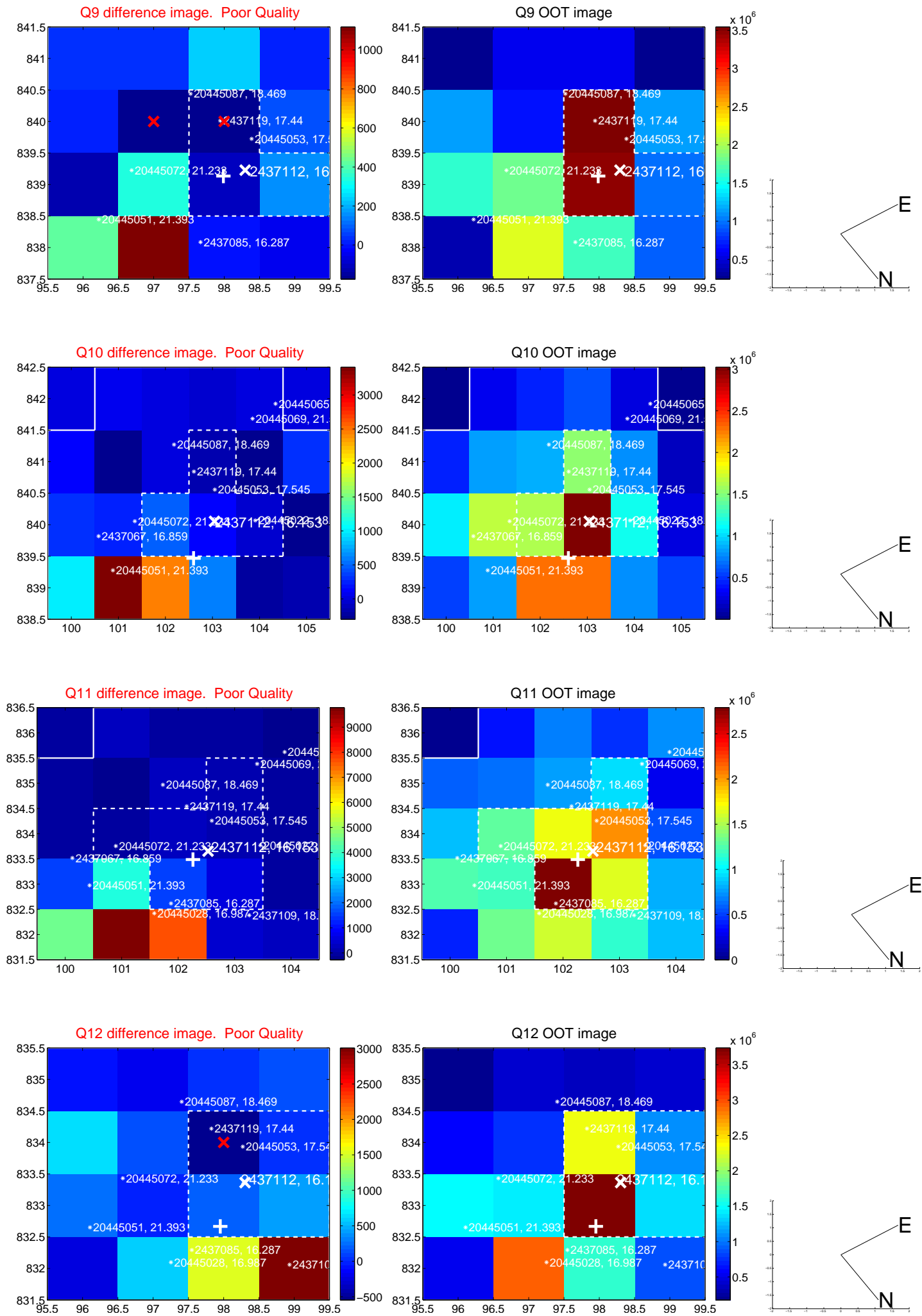
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



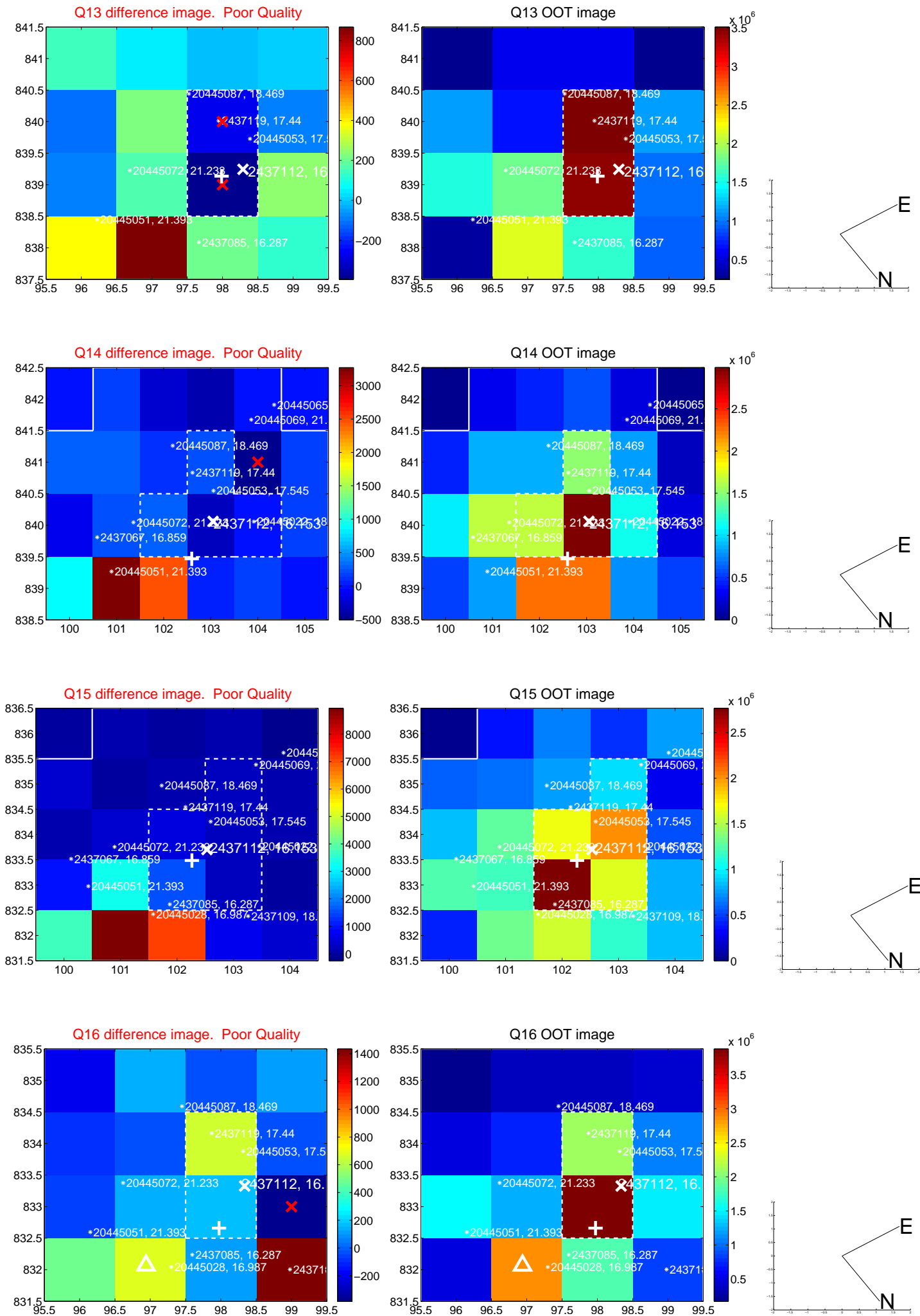
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



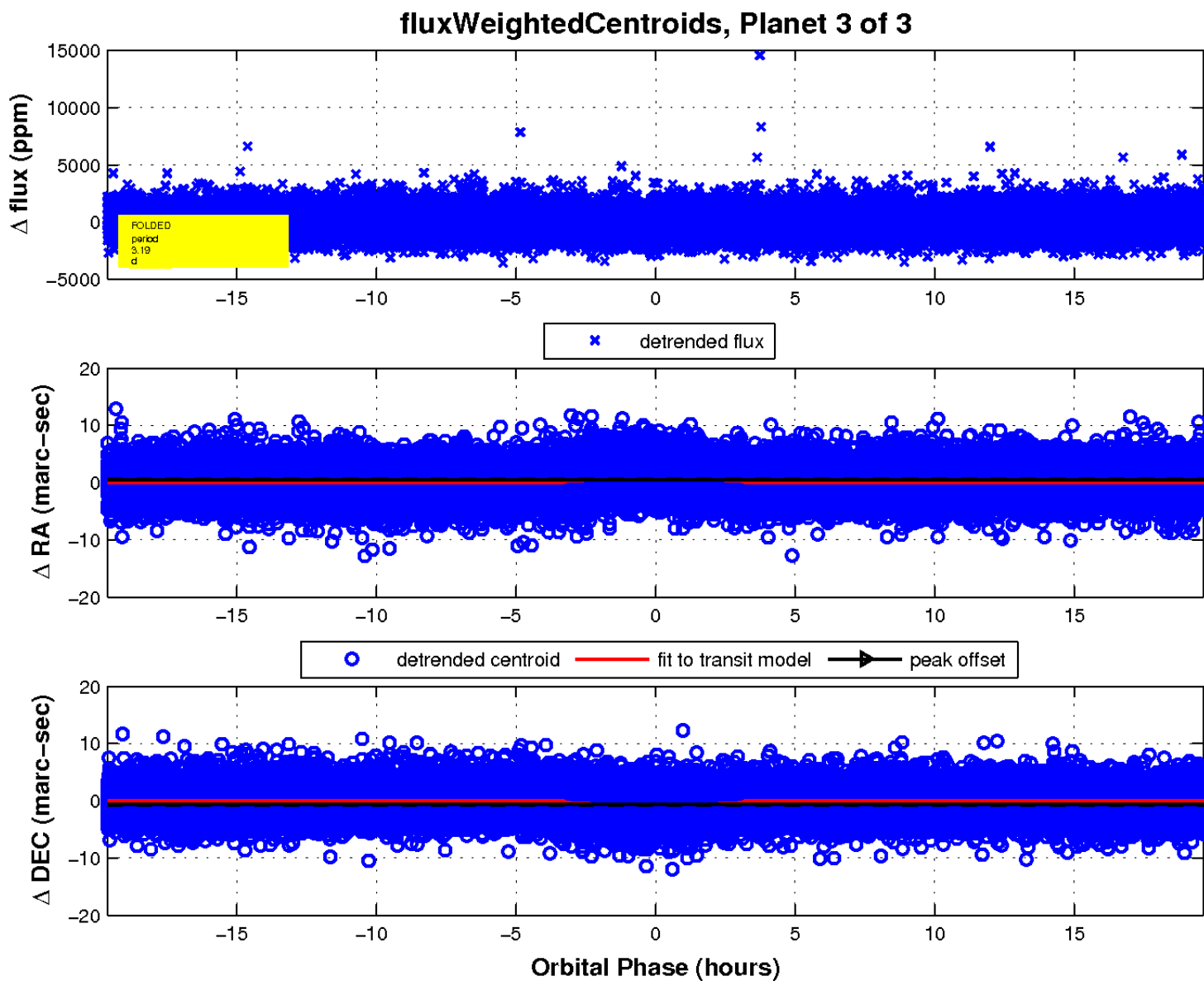
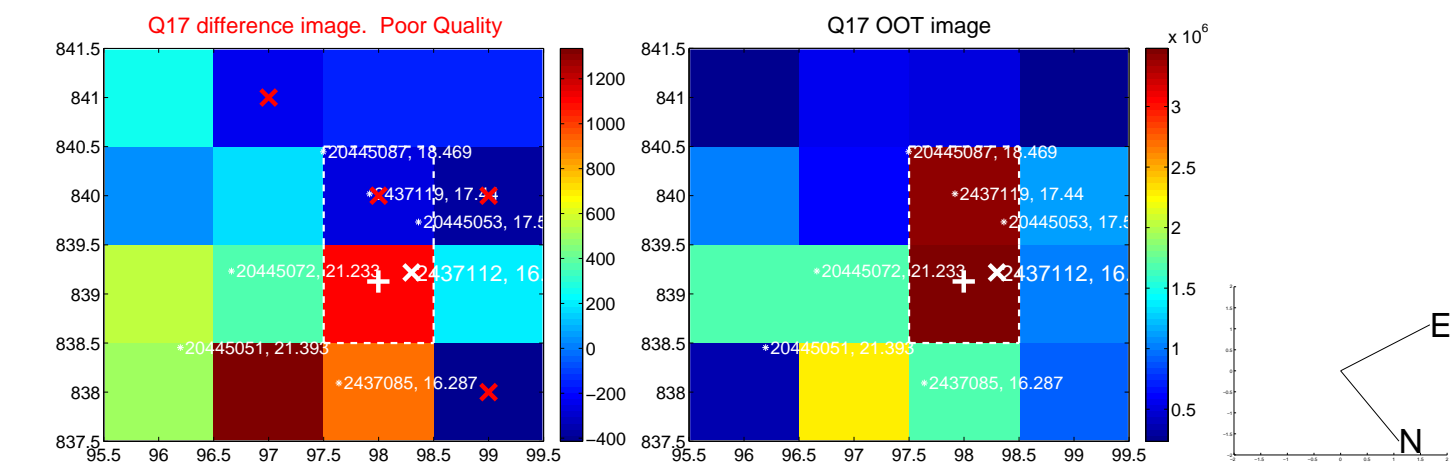
white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; +: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



white \times : KIC target position; $+$: OOT centroid; \triangle : difference centroid. red \times : large negative pixel value.



UKIRT Image

Declination

